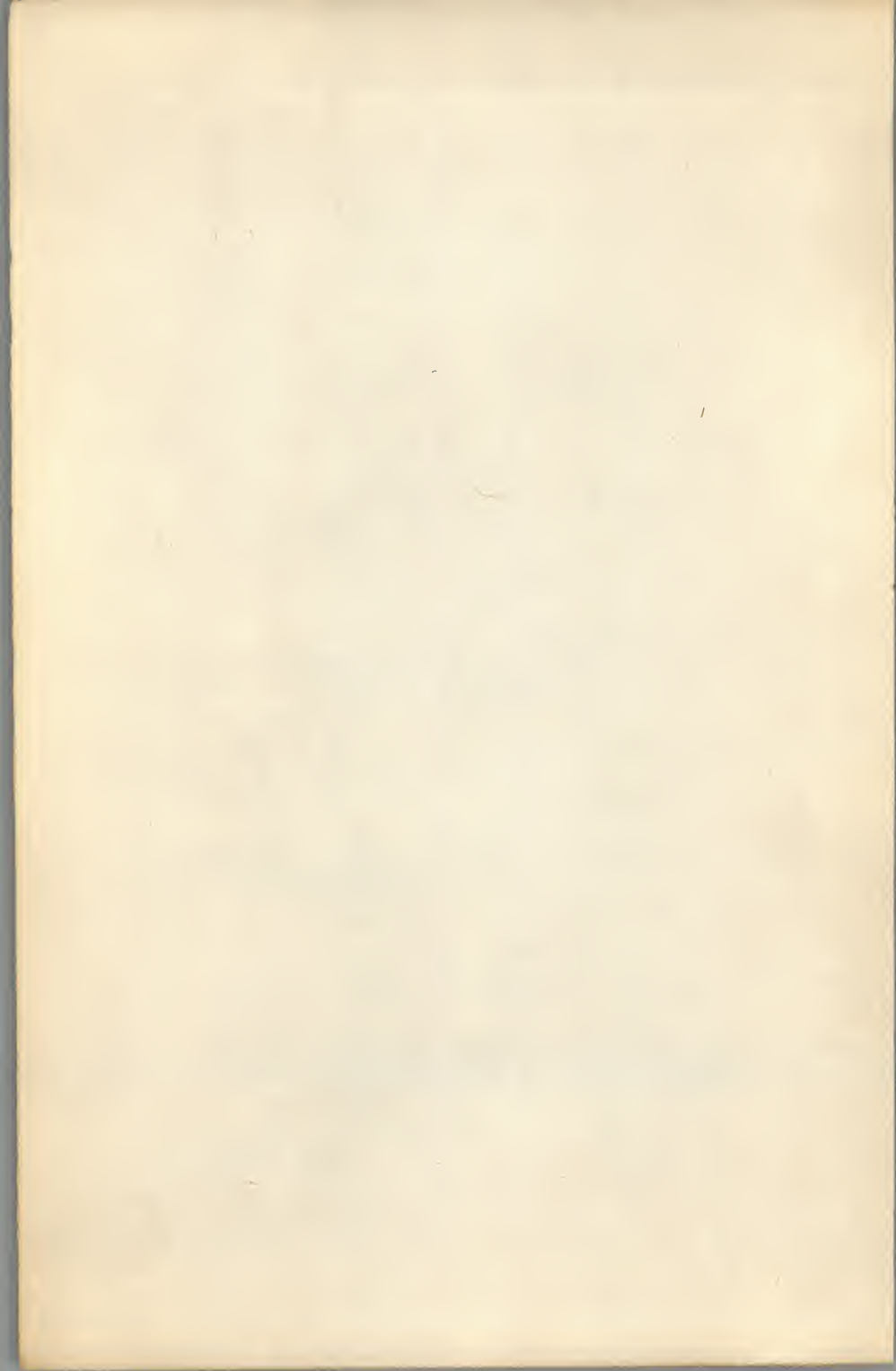


Maintenance Aids Handbook

digital

We change the way
the world thinks.



Maintenance Aids Handbook

digital

We change the way
the world thinks.

First Edition, 1981

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DECsystem-10	MASSBUS	

Introduction

The Maintenance Aids Handbook has been prepared to help you identify test equipment, hardware aids, tools, and preventive maintenance parts that are appropriate for DIGITAL hardware. It is a reference document for customers who maintain their own equipment.

TEST EQUIPMENT - Testers illustrated are for visual reference, and are represented with a brief functional description and any pertinent specifications. Power cords are provided where external power is required. Cables are also included where necessary for DC levels. More detailed information is provided in maintenance manuals or operating instructions which are provided with the testers.

HARDWARE AIDS - Hardware aids are generally needed for preventive or corrective maintenance operations that require specific technical knowledge of the device being serviced, and require interpretation and intervention by a qualified technician during use. Module extender boards, maintenance modules, disk drive alignment cartridges and packs, and magtape drive alignment tapes are included in this category. Detailed instructions for use, where applicable, must be referenced in the appropriate device maintenance manual.

TOOLS - Tool kits are listed for general maintenance along with any special tools needed to service a particular processor or option.

PREVENTIVE MAINTENANCE (P.M.) - P.M. parts are replaced or used on a scheduled periodic basis during preventive maintenance procedures on most types of computer system devices to maintain a high level of system performance. Replacement air filters, cleaning and lubricating materials, and parts that have an expected replacement schedule are included in this category. Instructions for use and replacement schedules must be referenced in the appropriate device maintenance manual. The quantity of P.M. parts estimated to service one option for one year is indicated in parentheses for ease in ordering. P.M. parts may be ordered separately or as complete kits.

MAINTENANCE PHILOSOPHY - While the items listed in this book are intended for self-maintenance customers, special training may be required to successfully use the maintenance equipment.

ORDERING INSTRUCTIONS - Orders may be placed through your local DIGITAL Sales Office, which can provide the current price and delivery information located in the Accessories and Supplies Price List. A directory of sales offices is provided in this document to help you in locating your nearest DIGITAL office.

WARRANTY - All DIGITAL maintenance test equipment described in this book is warranted against material defects and workmanship for a period of 90 days from date of delivery. For testers requiring repair during the war-

warranty period, the local DIGITAL Sales Office should be contacted for a return authorization number and shipping instructions.

REPAIR AND RECALIBRATION - DIGITAL will also repair and recalibrate testers after the warranty period. To have your tester repaired or recalibrated, call your local DIGITAL Sales Office for a return authorization number and an estimate of the repair/recalibration cost.

How to order

In Continental USA, call:

or mail order to:

800-258-1710

Digital Equipment Corporation
P.O. Box CS2008
Nashua, NH 03061

In New Hampshire, call:

or mail order to:

603-884-6660

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P.O. Box CS2008
Nashua, NH 03061

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or mail order to:

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632 Carribbean Drive
Sunnyvale, CA 94086

In Canada, call:

or mail order to:

800-267-6146

Digital Equipment of Canada
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P.O. Box 13000
Kanata, Ontario, Canada K2K
2A6
Att: A&SG Business Manager
TELEX: 610-562-8732

Outside North America, call or mail to:

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Coasin Argentina
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Argentina

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(54)-(1)-580044

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(613) 592-5111

Telex: 610-562-8732

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Sonda Ltd.

Teatinos 574 20 Piso

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Santiago

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270 Nanking East Road

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Telex: 26834 CCOMP

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Telex: 855-19675

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987276

Telex: 927-92096 E K A UN

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1303-1309 Dominion Center

43-59 Queen's Road East

Wanchai

Hong Kong

Telephone: (852)-(5)-2823076 or

(852)-(5)-273178

Telex: 780-76424

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DIGITAL

Hinditron Computers Pvt. Ltd.

504 Raheja Chambers

Backbay Reclamation Scheme

Bombay 400 021

India

Telephone: 244207

Telex: 011-2326

Cable: TEKHIND

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North European Region
Digital Equipment International Ltd.
Park House
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Facsimile No: (353)-(1)-308-433,X18
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Central European Region
DECsys Computers Ltd.
4 Yirmiyahu Street
IL-63505 Tel Aviv
Israel

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Accessories & Supplies Group
Kowa Building No. 25 (Third Floor)
8-7, Sanbancho, Chiyoda-ku
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Telex: 781-26428

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C.P.O. Box 289
Seoul
Korea

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Mexico 12, D.F.
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Cable: EARTH/LAGOS

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CHAPTER 1

Basic CPUs, Processor Options, Memories



FILTERS

A variety of filters is available as replacements during routine maintenance. Consult the maintenance manual for proper replacement intervals.

PORTABLE PAPER TAPE READER (PMK01)

The PMK01 is a high-speed paper tape reader capable of loading programs into the PDP-8A/8E/8F/8M and UNIBUS PDP-11 computers.

The unit comes complete with necessary interface modules and cabling and reader diagnostic program tapes and documentation.



SPECIFICATIONS

Reader Speed

Continuous Read Speed	110-115 cps
Single Character Speed	19-23 cps
Paper Tape	Nonoiled with less than 12 % transmissivity

Carrying Case Dimensions

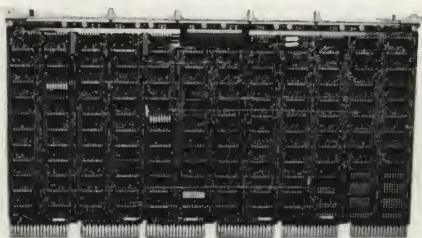
Size	13 in. H × 19 in W. × 9 in. D.
Weight	Less than 25 lb



KM11-A MAINTENANCE MODULES

The KM11-A maintenance modules provide the user with a means of manually operating the system and monitoring machine states during maintenance operations. By attaching an appropriate overlay to the KM11-A indicator panel, specific function signals can be monitored for a variety of CPUs and system devices, becoming a valuable troubleshooting aid. Refer to individual options for use.

The KM11-A is comprised of a W130 indicator driver module and a W131 switch and indicator module. The appropriate CPU and device overlays must be ordered separately.



UBE

The UNIBUS exerciser, UBE, exercises the UNIBUS by accelerating the activity on the UNIBUS to its maximum data transfer rate of 2.5 million bytes per second. It is a single hex board that exercises the UNIBUS from the CPU up to the slot it is in. The UBE is driven by diagnostic software which checks BUS requests, BUS grants, nonprocess or requests and grants, CPU arbitration logic, noise spikes, traps, and AC and DC lows. It may remain resident in the UNIBUS and be switched on and off under program control whenever the CPU is not busy. The UBE comes with a user guide showing installation procedures. Effectiveness of the UBE in actual use is dependent on the using technician's knowledge of UNIBUS operations because the UBE is otherwise unsupported by documentation. Software to drive the UBE is ordered separately based on the media desired.

1.1 Basic CPUs

OPTION: PDP-8A

Test Equipment:

None

Hardware Aids:

PMK01-AA,AB,CA,CB

Portable Paper Tape Reader

MP-PMK01

Print Set

EK-PMK01-MM

Maintenance Manual

W984

Double Side Double Height Extender Board

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

12-05748 (1)

Filter

12-12106 (2)

Filter, Air (H763 Power Supply)

74-07866 (1)

Filter, Bezel

74-08250 (1)

Filter, Foam, Side (Rack Mounted)

H950-SA (1)

Filter, H950 Cab.

OPTION: PDP-8E

Test Equipment:

None

Hardware Aids:

EK-PMK01-MM

Maintenance Manual

MP-PMK01

Print Set

PMK01-AA,AB,CA,CB

Portable Paper Tape Reader

W984

Double Side Double Height Extender Board

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

74-07866 (1)

Filter, Bezel

74-08250 (1)

Filter, Foam, Side (Rack Mounted)

H950-SA (1)

Filter, H950 Cab.

OPTION: PDP-8F**Test Equipment:**

None

Hardware Aids:

EK-PMK01-MM

Maintenance Manual

MP-PMK01

Print Set

PMK01-AA,AB,CA,CB

Portable Paper Tape Reader

W984

Double Side Double Height Extender Board

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

74-09424 (1)

Filter, Side (12")

OPTION: PDP-8M**Test Equipment:**

None

Hardware Aids:

EK-PMK01-MM

Maintenance Manual

MP-PMK01

Print Set

PMK01-AA,AB,CA,CB

Portable Paper Tape Reader

W984

Double Side Double Height Extender Board

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

74-09424 (1)

Filter, Side (12")

74-10768 (1)

Filter, Side (15")

OPTION: PDP-11/04, 11/34**Test Equipment:** None**Hardware Aids:**

EK-PMK01-MM	Maintenance Manual
MP-PMK01	Print Set
PMK01-BA,BB,CA,CB	Portable Paper Tape Reader
UBE	UNIBUS Exerciser
UVM	UNIBUS Voltage Margin Tester (Not for sale - Licensing for Self-Maintenance Customers)
W900	Layer Extender Board
W984	Double Extender Board

Tools: See Appendices A and B**Preventive Maintenance:**

12-12707 (1)	Filter, Air (5 1/4")
12-12392-02 (1)	Filter, Air (10 1/2")

OPTION: PDP-11/60**Test Equipment:** None**Hardware Aids:**

EK-PMK01-MM	Maintenance Manual
MP-PMK01	Print Set
PMK01-BA,BB,CA,CB	Portable Paper Tape Reader
UBE	UNIBUS Exerciser
UVM	UNIBUS Voltage Margin Tester (Not for sale - Licensing for Self-Maintenance Customers)
W900	Layer Extender Board
W984	Double Extender Board

Tools: See Appendices A and B**Preventive Maintenance:** None

OPTION: PDP-11/03J

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance:
12-14614-01 (1) Filter, Air

OPTION: PDP-11/05, 11/10

Test Equipment: None
Hardware Aids:
EK-PMK01-MM Maintenance Manual
MP-PMK01 Print Set
UBE UNIBUS Exerciser
UVM UNIBUS Voltage Margin Tester (Not for sale
- Licensing for Self-Maintenance
Customers)
55-09081-05 Maintenance Module Overlay
Used With KM11-A
55-09081-10 Maintenance Module Overlay
Used With KM11-A
KM11-A Maintenance Module
PMK01-BA,BB,CA,CB Portable Paper Tape Reader
W984 Double Extender Board
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: PDP-11/35, 11/40

Test Equipment: None
Hardware Aids:
EK-PMK01-MM Maintenance Manual
MP-PMK01 Print Set
UBE UNIBUS Exerciser
UVM UNIBUS Voltage Margin Tester (Not for sale
- Licensing for Self-Maintenance
Customers)
55-09081-12 Maintenance Module Overlay
Used With KM11-A
KM11-A Maintenance Module
PMK01-BA,BB,CA,CB Portable Paper Tape Reader
W984 Double Extender Board
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: PDP-11/45, 11/55**Test Equipment:**

None

Hardware Aids:

EK-PMK01-MM

Maintenance Manual

MP-PMK01

Print Set

UBE

UNIBUS Exerciser

UVM

UNIBUS Voltage margin Tester (Not for sale
- Licensing for Self-Maintenance
Customers)

55-09974

Maintenance Module Overlay
Used With KM11-A*

KM11-A

Maintenance Module*

PMK01-BA,BB,CA,CB

Portable Paper Tape Reader

W900

Layer Extender Board*

W984

Double Extender Board

Tools:

See Appendices A and B

SP45-KA

11/45 Maintenance Tool Kit

Preventive Maintenance:

None

OPTION: PDP-11/70**Test Equipment:**

None

Hardware Aids:

EK-PMK01-MM

Maintenance Manual

MP-PMK01

Print Set

UBE

UNIBUS Exerciser

UVM

UNIBUS Voltage Margin Tester (Not for sale
- Licensing for Self-Maintenance
Customers)

74-13772

Maintenance Module Overlay
Used With KM11-A

PMK01-BA,BB,CA,CB

Portable Paper Tape Reader

W131

Maintenance Board Expansion

W133

Double Maintenance Board

W900

Layer Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

4A-PM109

11/70 P.M. Kit

Contents**Qty****Description**

12-12392-01

(1)

Filter, Foam

H950-SA

(1)

Filter

*Included in SP45-KA 11/45 Tool Kit

1.2 Processor Options

OPTION: FP11-B,C

Test Equipment:

None

Hardware Aids:

55-09974

Maintenance Module Overlay Used
With KM11-A*

KM11-A

Maintenance Module*

W900

Layer Extender Board

(11/45)*

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

SP45-KA

11/45 Maintenance Tool Kit

Preventive Maintenance:

None

OPTION: FPP12

Test Equipment:

None

Hardware Aids:

55-09081-07

Maintenance Module Overlay
Used With KM11-A

KM11-A

Maintenance Module

W982

Extender Board

W983

Double Extender

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: KE11-A

Test Equipment:

None

Hardware Aids:

55-09081-01

Maintenance Module Overlay Used
With KM11-A

KM11-A

Maintenance Module

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

74-13698

Wick, Carriage Oil

*Included in SP45-KA 11/45 Tool Kit

OPTION: KE11-E,F

Test Equipment:	None
Hardware Aids:	
55-09081-13	Maintenance Module Overlay Used With KM11-A
KM11-A	Maintenance Module
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: KL10-A,B,D

Test Equipment:	
G742	Card,Positive Logic Jumper
Hardware Aids:	
55-09081-12	Maintenance Module Overlay Used With KM11-A
KM11-A	Maintenance Module
M941	Jumper Extender Board
W9017	Universal Extender
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: KL10-C,E

Test Equipment:	
H315	Modem Test Connector
Hardware Aids:	
55-09081-12	Maintenance Module Overlay Used With KM11-A
KM11-A	Maintenance Module
W9017	Universal Extender
W9017-YA	W9017 With Right Angle For Corporate Cabinet
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: KS10**Test Equipment:**

None

Hardware Aids:

W984

Double Extender Board

W9025

Universal Extender-Hex

Tools:

See Appendices A and B

12-12159-01

Clip, Test, 16 Pin IC

12-12159-02

Clip, Test, 24 Pin IC

12-13091-00

SW, Key

Preventive Maintenance:

None

OPTION: KT11-A**Test Equipment:**

None

Hardware Aids:

55-09081-02

Maintenance Module Overlay Used
With KM11-A

KM11-A

Maintenance Module

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: KT11-B**Test Equipment:**

None

Hardware Aids:

55-09081-06

Maintenance Module Overlay Used
With KM11-A

KM11-A

Maintenance Module

W982

Extender Board

W983

Double Extender

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: KT11-C,D**Test Equipment:**

None

Hardware Aids:

55-09081-13 .

KM11-A

W984

Maintenance Module Overlay Used
With KM11-A

Maintenance Module

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: VAX**Test Equipment:**

None

Hardware Aids:

W984

W9025

Double Extender Board

Universal Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

1.3 Memories

OPTION: MA10

Test Equipment:	None
Hardware Aids:	
W980	Module Extender
W982	Extender
Tools:	See Appendices A and B
Preventive Maintenance:	
12-05433 (1)	Filter

OPTION: ME10

Test Equipment:	None
Hardware Aids:	
W982	Extender
W983	Double Extender
Tools:	See Appendices A and B
Preventive Maintenance:	
4A-PM105	ME10 P.M. Kit
Contents	Description
12-05433 (1)	Filter
74-08472 (1)	Filter

OPTION: MF10

Test Equipment:	None
Hardware Aids:	
W974	Vector Module
W982	Extender
W983	Double Extender
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	
12-10757 (1)	Air Filter

OPTION: MM11-WP

Test Equipment:

70-11459

FS Test Fixture

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

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CHAPTER 2

Mass Storage



TOOLS AND SUPPLIES

A variety of special tools and supplies necessary to service the equipment is recommended as part of the repair philosophy.



RM03-TA

The RM03-TA tester is a portable suitcase tester used to test the RM02 and RM03 disk drives. The tester contains its own DC power supply that accepts the same AC input as the RM03 or RM02 disk drives. The RM03-TA, in conjunction with an alignment pack, allows off-line verification and alignment of heads.



FILTERS

A variety of filters is available as replacements during routine maintenance. Consult the maintenance manual for proper replacement intervals.



RP06-TA TEST SERVICE KIT

The RP06-TA Test Service Kit is a portable test unit designed as an alignment, exercising, troubleshooting, and servicing aid for the RP05/RP06 Disk Drive. The kit contains an RP06-TA tester and specialized tools. The RP06-TA tester connects to the minimum device level interface. It can be used to functionally exercise and test the disk drive while off-line. It also can be used to align the heads. The specialized tools consist of head alignment installation and torque tools, and a PCB extender.

2.1 Cartridge Disks

OPTION: RK01

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	
29-15510 (2)	Filter, Air
29-15536 (2)	Filter, Air
29-19557 (2)	Tex Pad

OPTION: RK02, RK03

Test Equipment:	
29-17547	Exerciser, Seek/Restore
Hardware Aids:	
29-17549	Extender PCB
Tools:	See Appendices A and B
29-17551	Cone
29-17552	Bar
29-17553	Screwdriver, Torque 1-100
29-20655	Head Adjustment Tool
Preventive Maintenance:	
29-19101 (2)	Filter
29-19557 (2)	Tex Pad

OPTION: RK05, RK05J

Test Equipment:	
EK-RK05X-MM	Tester Maintenance Manual
RK05-TA	Read/Write Position Tester
Hardware Aids:	
RK05K-AC	Alignment Cartridge
W984	Double Extender Board
Tools:	See Appendices A and B
29-19663	Inspection Mirror
29-20994	Wrench, Torque
29-20995	Bit, Allen
29-22521	Driver, Torque 125"/oz
29-22522	Bit, 3/32", Allen, Female
Preventive Maintenance:	
12-12175-01 (1)	Filter, Air, High Efficiency
22-00007	Disk & Head Cleaner Kit
RK05K-AA,(AB)	DEC Pack Cleaner 120V (240V)

OPTION: RK05F**Test Equipment:**

EK-RK05X-MM
RK05-TA

Tester Maintenance Manual
Read / Write Position Tester

Hardware Aids:

RK05K-AC
W984

Alignment Cartridge
Double Extender Board
See Appendices A and B

Tools:

29-19663
29-20994
29-20995
29-22521

Inspection Mirror
Wrench, Torque
Bit, Allen
Screwdriver, Torque
125" / oz
Bit, 3 / 32", Allen, Female

29-22522

Preventive Maintenance:

12-12175-01 (1)

Filter, Air, High
Efficiency
Disk & Head Cleaner Kit

22-00007

OPTION: RK06-EA,EB,EC,ED**Test Equipment:**

EK-RK67F-0P

RK06/07 FTB

Operation/Service

Manual

RK06/7 Exerciser 60 Hz, (50 Hz)

RK6/7-TA, (TB)

Hardware Aids:

RK06K-AC

Alignment Cartridge

Tools:

See Appendices A and B

29-22771

RK06 Tool Kit

93-06056

Carriage Alignment

Fixture

93-06058

Wrench, Eccentric Bearing

93-06072

Shutter Alignment Tool

93-06076

Head Insertion & Removal

Tool

93-06087

Head Alignment Fixture

93-06122

Set Of 5 Shims For Glass

Shutter

93-06123

2 Shims For Speed

Transducer

93-06171

Head Separation Assembly

Tool

93-06240

Indicator/Holder Glass

Shutter Alignment

Preventive Maintenance:

RK07K-AA,AB

Disk Cartridge Cleaner

4A-PM112

RK06 P.M. Kit

Contents**Qty****Description**

12-12640

(1)

Contact Grounding

12-12904

(1)

Filter, Air, Hepa, 32CFM

12-12944

(1)

Filter, Foam

70-13178

(1)

Brush Arm Assy (Modified)

OPTION: RK07-EA,EB,EC,ED**Test Equipment:**

EK-RK67F-0P

RK06/07 FTB

Operation/Service

Manual

RK6/7-TA, (TB)

RK06/07 Exerciser 60 Hz,
(50 Hz)**Hardware Aids:**

RK07K-AC

Alignment Cartridge

Tools:

29-22771

See Appendices A and B

93-06056

RK06 Tool Kit

Carriage Alignment

Fixture

93-06058

Wrench, Eccentric Bearing

93-06072

Shutter Alignment Tool

93-06076

Head Insertion & Removal
Tool

93-06087

Head Alignment Fixture

93-06122

Set Of 5 Shims For Glass
Shutter

93-06123

2 Shims For Speed

Transducer

93-06171

Head Separation Assembly
Tool

93-06240

Indicator/Holder Glass
Shutter Alignment**Preventive Maintenance:**

RK07K-AA,AB

Disk Cartridge Cleaner

4A-PM113

RK07 P.M. Kit

Contents**Qty****Description**

12-12640

(1)

Contact Grounding

12-12904

(1)

Filter, Air, Hepa, 32CFM

12-12944

(1)

Filter, Foam

OPTION: RK11-C**Test Equipment:**

None

Hardware Aids:

55-09081-03

Maintenance Module Overlay

Used With KM11-A

55-09081-04

Maintenance Module Overlay

Used With KM11-A

KM11-A

Maintenance Module

W983

Double Extender

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: RK11-D,E**Test Equipment:**

None

Hardware Aids:

55-09081-11

Maintenance Module Overlay

KM11-A

Used With KM11-A

W984

Maintenance Module

Tools:

Double Extender Board

Preventive Maintenance:

See Appendices A and B

None

OPTION: RK611**Test Equipment:**

None

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: RK8-E,F,L**Test Equipment:**

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: RKV11-D**Test Equipment:**

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: RL01**Test Equipment:**

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

RL01K-AA,AB

Disk Cartridge Cleaner

4A-PM114

RL01 P.M. Kit

Contents**Qty****Description**

12-13097-03 (1)

Filter, Air, Hepa, High Efficiency

74-15294 (1)

Brush Ground

OPTION: RL02**Test Equipment:**

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

RL01K-AA,AB

Disk Cartridge Cleaner

4A-PM115

RL02 P.M. Kit

Contents**Qty****Description**

12-13097-03 (1)

Filter, Air, Hepa, High Efficiency

74-15297 (1)

Filter, Foam

74-15302 (1)

Strap, Brush Holder

2.2 Disk Pack Drives

OPTION: RM02, RM03

Test Equipment:

RM03-TA RM02 / 03 Tester

Hardware Aids:

29-22933 Extender PCB

30-13992-02 C E Pack

Tools:

29-13212 See Appendices A and B

29-22914 Screwdriver, Torque

29-22934 2-36" / lb.

29-22935 Tool, Sensor Height Adjust

29-22936 Carriage / Spindle

29-22935 Adjustment Tool

29-22936 Head Adjustment Tool

29-23001 Bit, 1 / 4 Hex Head

Adjustment

Insert Tool

Preventive Maintenance:

4A-PM116 RM02/03 P.M. Kit

Contents	Qty	Description
29-22926	(1)	Filter, Washable Aluminum
29-22925	(2)	Filter, Air

OPTION: RM05

Test Equipment:

RM03-TA RM02/03 Tester

Hardware Aids:

29-22933 Extender PCB

30-17108 C E Pack

Tools:

29-13212 Screwdriver, Torque 2-36" / lb

29-20906 Wrench, Torque

29-22934 Carriage / Spindle Adjustment Tool

29-22935 Head Adjustment Tool

29-22936 Bit, 1 / 4 Hex Head Adjustment

Preventive Maintenance:

29-23590 (1) Filter, Washable Aluminum

29-23591 (2) Filter, Air

OPTION: RP01

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: RP02

Test Equipment:	RP02/03 Tester Manual
EK-RP02T-MM	RP02 Disk Pack Tester
RP02-TA	
Hardware Aids:	
29-13804	Double Extender PCB
29-16151	Single Extender PCB
29-20658	C E Pack
Tools:	See Appendices A and B
29-13163	Head Installation
29-13209	Carriage Moving Tool
29-13211	Dentent Clip
29-13212	Screwdriver, Torque 2-36" / lb.
29-13213	Head Adjustment
29-13519	Hex Key, Long Arm
29-14133	Screwdriver, Berylium 5 / 16" Tip
29-14134	Screwdriver, Berylium Phil 8 1 / 8"
29-17376	Adapter, Torque
29-17381	Screwdriver, Torque
29-17382	Bar, Extender 6"
Preventive Maintenance:	
4A-PM117	RP02 P.M. Kit
Contents	Description
29-10169	(2) Filter, Drive
29-13243	(2) Filter
29-14309	(4) Filter, Pac
29-16639	(2) Filter, Glassaire
29-20915	(4) O-Ring
29-17679	(4) Filter, Pre
29-17681	(2) Filter, Absolute

OPTION: RP02-AS,BS, RP03**Test Equipment:**

EK-RP02T-MM

RP02-TA

RP02/03 Tester Manual

RP02/03 Disk Pack Tester

Hardware Aids:

29-18939

29-20658

Extender PCB

C E Pack

Tools:

29-13212

29-17765

29-17766

29-18011

29-18109

29-18286

29-19021

29-19179

29-18118

See Appendices A and B

Screwdriver, Torque

2-36" /lb.

Coarse Adjustment Tool

Extract PCB

Screwdriver, Beryllium

8 5/8"

Wrench, Allen, Head

Adjustment

Shim 0.002"

Head Adjuster, Fine

Shim Transducer 0.002"

Alignment Tool Kit-Carriage

Preventive Maintenance:

4A-PM118

Contents

29-14309

29-17612

29-17679

29-17681

29-20915

29-21497

Qty

(4)

(2)

(4)

(2)

(4)

(2)

RP02-AS,BS/RP03 P.M. Kit

Description

Filter, PAC

Contact Ground

Filter, Pre

Filter, Absolute

O-Ring

Brush Assembly

OPTION: RP04-AA,AB,BA,BB**Test Equipment:**

RP04-TC

RP04 Interface to RP06-TA*

RP06-TA

RP05/06 Test Service Kit*

Hardware Aids:

29-18939

Extender PCB

29-21291

Extender Jumper Card PCB

29-21292

C E Pack 333G

W900

Layer Extender Board, 11/45

W984

Double Extender Board

Tools:

See Appendices A and B

29-19179

Shim Transducer 0.002"

29-19180

Shim Transducer 0.003"

29-19181

Shim Transducer 0.005"

29-19182

Shim Transducer 0.010"

29-21284

Head Alignment

29-21285

Head Installation

29-21286

Carriage Alignment Kit

29-21287

Alignment Head

29-21288

Head Unload

29-21290

Air Measure Kit

29-21403

Shim Transducer 0.020"

29-21412

Extractor

29-21481

Cleaning Kit, Brush

29-21483

Gauge, 3 MIL Shim

29-21484

Gauge, 5 MIL Shim

29-21485

Extractor, Pin / Contact

29-21486

Gauge, 2 MIL Shim

29-22311

Bit, Torque, Head

Alignment

Preventive Maintenance:

22-00007

Disk Cleaning Kit

4A-PM119

RP04 P.M. Kit

Contents**Qty****Description**

29-17612

(2)

Contact, Ground

29-21275

(4)

Filter, Pre

29-21276

(1)

Filter, Absolute

* An RP06-TA tester is required to use the RP04-TC on the RP04 disk.

OPTION: RP05, RP06**Test Equipment:**

RP06-TA

RP05/06 Test Service Kit

Hardware Aids:

29-21292

C E Pack 333G

29-22190

Extender PCB

W900

Layer Extender Board 11/45

W984

Double Extender Board

Tools:

29-22183

See Appendices A and B

29-22191

Kit, Mechanical Alignment

29-22445

Gauge, Absolute Filter

29-22179

Socket Set Special 3/8"

29-22180

Head Alignment Tool

29-22181

Head Installation Tool

29-22544

Head Torque Tool

Pin, Dowel

Preventive Maintenance:

22-00007

Kit, Head Cleaning

29-22086 (1)

Filter, Absolute

OPTION: RPR02**Test Equipment:**

None

Hardware Aids:

29-13804

Double Extender PCB

29-16151

Single Extender PCB

29-20658

C E Pack

Tools:

See Appendices A and B

29-13163

Head Installation

29-13209

Carriage Moving

29-13212

Screwdriver, Torque

29-13213

Head Adjustment

29-13519

Hex Key Set, Long Arm

29-13805

Lubricator

29-14133

Screwdriver, Beryllium

5/16" Tip

29-14134

Screwdriver, Beryllium

Phil 8 1/8"

29-17376

Adaptor, Torque

29-17381

Screwdriver, Torque

29-17382

Bar, Extender 6"

29-18109

Wrench, Allen Head

Adjustment

29-18196

Alignment Kit Carriage

Preventive Maintenance:

4A-PM120

RPR02 P.M. Kit

Contents**Qty****Description**

29-10169

(1)

Filter, Drive

29-13243

(4)

Filter

29-14111

(1)

Cam Unload A

29-14112

(1)

Cam Unload B

29-14309

(4)

Filter, PAC

29-16639

(4)

Filter, Glassaire

29-19883

(2)

Button, Carbon

29-20915

(4)

O-Ring

2.3 Drums

OPTION: RM10-B

Test Equipment:

None

Hardware Aids:

W982

Extender

W983

Double Extender

Tools:

See Appendices A and B

29-13859

Head Adjustment

29-16220

Wrench, Torque

29-21492

Bit, Allen 7/64"

Preventive Maintenance:

29-16735 (1)

Filter

2.4 Fixed Head Disks

OPTION: DF32, DF32-D

Test Equipment:

DF32-TA

EK-ODF32-MM

Timing Track Writer

DF32 Timing Track Writer

Maintenance Manual

Hardware Aids:

W980

W983

Module Extender

Double Extender

Tools:

29-12563

See Appendices A and B

Glass Alignment DF32

Preventive Maintenance:

29-15198

29-15199 (2)

RSC08

Aero Duster Spray

Head Cleaner

Disk Cleaning Kit

OPTION: DS32

Test Equipment:

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: RS03, RS04

Test Equipment:

RS04-TA

Timing Track Writer

Hardware Aids:

W984

Double Extender Board

Tools:

29-13212

See Appendices A and B

Screwdriver, Torque

29-21492

2-36"/lb.

Bit, Allen, 7/64"

Preventive Maintenance:

12-10803-01 (1)

12-11255 (1)

RSC08

Filter, Air

Filter, Foam Rubber

Disk Cleaning Kit

OPTION: RS08**Test Equipment:**

RS08-TA

Timing Track Writer

Hardware Aids:

W982

Extender

W983

Double Extender

Tools:

RSKIT-A

See Appendices A and B

Head Alignment & Disk

Repair Kit

Preventive Maintenance:

RSC08

Disk Cleaning Kit

4A-PM122

RS08/09/09-A/RS11 P.M. Kit

Contents Qty**Description**

12-09388 (2)

Filter, Air, Absolute

74-07181 (2)

Pre-filter

OPTION: RS09, RS09-A, RS11**Test Equipment:**

RS09-TA

Timing Track Writer

Hardware Aids:

W982

Extender

W983

Double Extender

Tools:

RSKIT-A

See Appendices A and B

Head Alignment & Disk

Repair Kit

Preventive Maintenance:

RSC08

Disk Cleaning Kit

4A-PM122

RS08/09/09-A/RS11 P.M. Kit

Contents Qty**Description**

12-09388 (2)

Filter, Air, Absolute

74-07181 (2)

Pre-filter

OPTION: RS64**Test Equipment:**

RS64-TA

Timing Track Writer

Hardware Aids:

W982

Extender

W983

Double Extender

Tools:

See Appendices A and B

Preventive Maintenance:

RSC08

Disk Cleaning Kit

2.5 Floppy Disks

OPTION: RX01

Test Equipment:	None
Hardware Aids:	
30-14957	Alignment Diskette
Tools:	See Appendices A and B
93-06353-00	Belt Gauge, 60 Hz (CALCOMP)
93-06353-01	Belt Gauge, 50 Hz (CALCOMP)
93-06353-02	BELT GAUGE, 60 Hz (DEC)
93-06353-03	BELT GAUGE, 50 Hz (DEC)
Preventive Maintenance:	None

OPTION: RX02

Test Equipment:	None
Hardware Aids:	
30-14957	Alignment Diskette
Tools:	See Appendices A and B
93-06353-02	Belt Gauge, 60 Hz (DEC)
93-06353-03	Belt Gauge, 50 Hz (DEC)
Preventive Maintenance:	None

OPTION: RX11, RX211

Test Equipment:	None
Hardware Aids:	
55-09081-14	Maintenance Module Overlay Used With KM11-A
KM11-A	Maintenance Module
W987	Double Side Quad Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: RX8E, RX28**Test Equipment:** None**Hardware Aids:**

W987

Double Side Quad Extender
Board**Tools:** See Appendices A and B**Preventive Maintenance:** None**OPTION: RXV11, RXV21****Test Equipment:** None**Hardware Aids:** None**Tools:** See Appendices A and B**Preventive Maintenance:** None

2.6 Tape Drives

OPTION: TE10N, TE10W, TE16

Test Equipment:

M8912

Slave Test Function Gen

Hardware Aids:

29-22020

90-08268

Tape, Master Skew, 7" Reel

Compound Thermal Joint

Tools:

29-13515

29-16871

29-18609

29-20273

29-22039

29-22265

29-22998

29-22999

48-50023-01

48-50023-03

48-50023-04

48-50023-05

48-50023-06

48-50023-07

See Appendices A and B

Feeler Gauge Set

Magnasee

Jig Capstan

Microscope 50X

Depth Gauge 0-3"

Tensiometer, Bolt 5M Series

Gauge, Hub Height Adjustment

Gauge, Combo Span Wrench Adapt

Cellu Acet, Amber 0.001" X 10"

Cellu Acet, Red 0.002" X 10"

Cellu Acet, Green 0.003" X 10"

Cellu Acet, Tan 0.004" X 10"

Cellu Acet, Blue 0.005" X 10"

Cellu Acet, Tran Mat

0.0075" X 10"

48-50023-08

Cellu Acet, Brown 0.010" X 10"

74-16187

Vacuum System Pulley Height

Gauge

Preventive Maintenance:

TUC01

4A-PM123

Tape Cleaning Kit

TE10N/10W/TE16 P.M. Kit

Contents**Qty****Description**

12-09877

(1)

Washer, Tape Guide

12-09956

(2)

Muffler

12-13119

(1)

Hub, Quick Release

29-11760

(2)

Hub Repair Kit

74-16662

(1)

Cover, Buffer Column

74-17902

(1)

Flange, Front Fixed Reel

OPTION: TM11

Test Equipment:

None

Hardware Aids:

55-09081-05

Maintenance Module Overlay

Used With KM11-A

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: TMA11**Test Equipment:**

None

Hardware Aids:

55-09081-05

Maintenance Module Overlay

Used With KM11-A

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: TR79**Test Equipment:**

29-21094

Control Status Test Kit

29-22304

Kit PE RD/WR Data Test

Hardware Aids:

None

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

Microscope 50X

Preventive Maintenance:

TUC01

Tape Cleaning Kit

OPTION: TS03**Test Equipment:**

29-21922

Test Panel

Hardware Aids:

29-21925

Extender PCB

29-22020

Tape, Master Skew 600'

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

29-21904

Microscope 50X

29-21940

Alignment Tool, Tape

29-22037

Puller, Capstan

29-22038

Gauge, Tape Height

Gauge, TNSN Arm, Align 3

Preventive Maintenance:

TUC01

Tape Cleaning Kit

4A-PM124

TS03 P.M. Kit

Contents**Qty****Description**

29-21964

(2)

Hub Repair Kit

OPTION: TS11**Test Equipment:**

None

Hardware Aids:

29-22020

Tape, Master Skew 600'

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

Microscope, 50X

Preventive Maintenance:

TUC01

Tape Cleaning Kit

OPTION: TU10-E,F**Test Equipment:**

M8912

Slave Test Function Gen

Hardware Aids:

29-19224

Tape, Master Skew 1200'

W983

Double Extender

W984

Double Extender Board

Tools:

12-10481

See Appendices A and B

29-16871

Alignment Tool

29-18607

Magnasee

29-18608

Gauge, Roller Guide

29-18609

Gauge, Reel Read / Write

29-18610

Jig Capstan

29-18611

Gauge, Read / Write Set-Up

29-18923

Gauge, Hub

29-20273

Plier, Grip Ring

Microscope 50X

Preventive Maintenance:

TUC01

Tape Cleaning Kit

12-05944 (2)

Motor, Vacuum*

29-21863 (4)

Brush, Motor*

4A-PM126

TU10N / 10W-E / TY16-E P.M. Kit

Contents**Qty****Description**

12-09956

(4)

Muffler

12-10021

(2)

Ring, Compression

12-10027

(1)

Brake

12-10031

(2)

Washer, Thrust

12-10477

(8)

Sensor, Low Pressure

29-11760

(2)

Hub Repair Kit

*Not required after FCO#0098 is installed

OPTION: TU10N-E,F, TU10W-E,F, TU16-E**Test Equipment:**

M8912

Slave Test Function Gen

Hardware Aids:

29-19224

Tape, Master Skew 1200'

W983

Double Extender

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

29-22265

Microscope 50X

48-50023-01

Tensiometer, Belt 5M SE

48-50023-03

Cellu Acet, Amber 0.001" X 10"

48-50023-04

Cellu Acet, Red 0.002" X 10"

48-50023-05

Cellu Acet, Green 0.003" X 10"

48-50023-06

Cellu Acet, Tan 0.004" X 10"

48-50023-07

Cellu Acet, Blue 0.005" X 10"

Cellu Acet, Tran Matt

0.0075" X 10"

48-50023-08

Cellu Acet, Brown 0.010" X 10"

Preventive Maintenance:

TUC01

Tape Cleaning Kit

4A-PM126

TU10N/ 10W-E,F / TU16-E P.M. Kit

Contents**Qty****Description**

12-09956

(4)

Muffler

12-10021

(2)

Ring, Compression

12-10027

(1)

Brake

12-10037

(2)

Washer, Thrust

12-10477

(8)

Sensor, Low Pressure

29-11760

(2)

Hub Repair Kit

OPTION: TU40, TU41**Test Equipment:**

None

Hardware Aids:

29-19224

Tape, Master Skew 1200'

Tools:

See Appendices A and B

29-16871

Magnasee

29-20273

Microscope 50X

29-20678

Gauge 0-60"

29-21021

Remover, Hub Clamp

29-21022

Gauge, Capstan HT

29-21433

Feeler Stock 0.006" X 12"

Preventive Maintenance:

TUC01

Tape Cleaning Kit

4A-PM127

TU40/41 P.M. Kit

Contents**Qty****Description**

29-15199

(2)

Head Cleaner

29-18718

(1)

Guide, Bottom Right

29-18719

(1)

Guide, Bottom Left

29-18722

(1)

Guide, Top Left

29-18778

(1)

Filter

29-18779

(1)

Filter, Purolator

OPTION: TU45**Test Equipment:**

None

Hardware Aids:

29-19224

Tape, Master Skew 1200'

Tools:

See Appendices A and B

29-16871

Magnasee

29-20273

Microscope, 50X

29-20678

Gauge, 0-60"

Preventive Maintenance:

TUC01

Tape Cleaning Kit

4A-PM128

TU45 P.M. Kit

Contents**Qty****Description**

29-22282

(2)

Filter, Air

OPTION: TU55, TU56**Test Equipment:**

G500-T

Skew Tester Module

Hardware Aids:

W980

Module Extender

W983

Double Extender

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

74-08010

Microscope 50X

Alignment Gauge Reel Hub

Preventive Maintenance:

TUC01

Tape Cleaning Kit

OPTION: TU58, TU60, TU66, TU72**Test Equipment:**

None

Hardware Aids:

None

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

Microscope 50X

Preventive Maintenance:

TUC01

Tape Cleaning Kit

OPTION: TU70**Test Equipment:**

29-21733

Field Tester

Hardware Aids:

29-19224

Tape, Master Skew 1200'

Tools:

29-16871

See Appendices A and B

29-20273

Magnasee

29-20678

Microscope, 50X

29-21740

Gauge 0-60"

29-21832

Extender PCB

29-21841

Ball Driver Set, 12 Piece

Gauge, Pressure 0-10

Preventive Maintenance:

29-15199 (2)

Cleaner, Tape Head

29-21643 (1)

Filter

29-21644 (1)

Prefilter

29-21653 (1)

Filter

TUC01

Tape Cleaning Kit

OPTION: TU77**Test Equipment:**

29-23218

Module Extender PCBA

Hardware Aids:

29-11691

Tape, Master Output 1200'

Tools:

29-11635

See Appendices A and B

29-11636

Tachometer

29-11647

Gauge, 5PSIG

Accessories, Portable

Accuracy

29-16871

Magnasee

29-20273

Microscope, 50X

29-20678

Gauge, 0-60"

29-22039

Gauge, Depth 0-3"

29-23206

Reel Motor Centering Tool

29-23207

Bar, Locating

29-23228

Tube Fitting, Lower

Preventive Maintenance:

TUC01

Tape Cleaning Kit

4A-PM130

TU77 P.M. Kit

Contents**Qty****Description**

29-23220

(2)

Muffler

29-23259

(2)

Filter, Air

CHAPTER 3

Input/Output Options

THE UNIVERSITY OF CHICAGO
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540 EAST 57TH STREET
CHICAGO, ILL. 60637
U.S.A.

3.1 Card Readers

OPTION: CD11-EA,EB

Test Equipment:	None
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
29-19501	Insert / Extract
Preventive Maintenance:	None

OPTION: CMS11-H

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
29-19229	Extender PCB
Preventive Maintenance:	
29-18558 (1)	Lube 2, Solenoid

OPTION: CP10

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: CR10-DA,DB,EA,EB,FA,FB

Test Equipment:	None
Hardware Aids:	
W982	Extender
W983	Double Extender
Tools:	See Appendices A and B
29-19501	Insert / Extract
36-10989-01	Card Mark Sense Test Scorecard
36-15207-01	MSB-11 Cards, BASIC Carton
36-15208-01	MSB-11 Cards, FORTRAN Carton
Preventive Maintenance:	
29-19426 (1)	Filter Assembly

OPTION: CR10-HA,HB

Test Equipment:	None
Hardware Aids:	
W982	Extender
W983	Double Extender
Tools:	See Appendices A and B
29-19501	Insert/Extract
36-10989-01	Card Mark Sense Test Scorecard
36-15207-01	MSB-11 Cards, BASIC Carton
36-15208-01	MSB-11 Cards, FORTRAN Carton
Preventive Maintenance:	
29-19427 (1)	Filter Assembly

OPTION: CR11,-A

Test Equipment:	None
Hardware Aids:	
29-19229	Extender PCB
W987	Double Side Quad Extender Board
Tools:	See Appendices A and B
29-19501	Insert/Extract
36-10989-01	Card Mark Sense Test Scorecard
36-15207-01	MSB-11 Cards, BASIC Carton
36-15208-01	MSB-11 Cards, FORTRAN Carton
Preventive Maintenance:	None

OPTION: CR11-BC,BD

Test Equipment:	None
Hardware Aids:	
29-19229	Extender PCB
Tools:	See Appendices A and B
29-19501	Insert/Extract
36-10989-01	Card Mark Sense Test Scorecard
36-15207-01	MSB-11 Cards, BASIC Carton
36-15208-01	MSB-11 Cards, FORTRAN Carton
Preventive Maintenance:	
29-19557 (2)	Tex Pad

OPTION: CR8-FA, FB**Test Equipment:**

None

Hardware Aids:

29-19229

Extender PCB

Tools:

29-19501

See Appendices A and B

36-10989-01

Insert/Extract

36-15207-01

Card Mark Sense Test Scorecard

36-15208-01

MSB-11 Cards, BASIC Carton

MSB-11 Cards, FORTRAN Carton

Preventive Maintenance:

29-19557 (2)

Tex Pad

OPTION: CTS11**Test Equipment:**

None

Hardware Aids:

29-21368

Extender PCB

Tools:

29-12635

See Appendices A and B

29-21321

Gauge, Card

Ejector, Card

Preventive Maintenance:

None

3.2 Printers

OPTION: LA11-P

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	
74-13698	Wick, Carriage Oil

OPTION: LA180

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	
74-13698	Wick, Carriage Oil

OPTION: LA35

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP02

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
29-16158	Extender PCB
29-18055	Extractor, Pin
Preventive Maintenance:	None

OPTION: LP04-R,S

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP05

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: LP06

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: LP07-AA,BA

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
29-16158 Extender PCB
Preventive Maintenance: None

OPTION: LP08-P

Test Equipment: None
Hardware Aids: W982 Extender
W983 Double Extender
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: LP10-A

Test Equipment: None
Hardware Aids: W982 Extender
W983 Double Extender
Tools: See Appendices A and B
29-12522 Scale, Spring 32 oz
Preventive Maintenance: None

OPTION: LP10-D

Test Equipment:	None
Hardware Aids:	
W982	Extender
W983	Double Extender
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP10-F,H

Test Equipment:	None
Hardware Aids:	
W982	Extender
W983	Double Extender
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP11 (Also See LP02, 04, 05)

Test Equipment:	None
Hardware Aids:	
W987	Double Side Quad Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP12

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP14,-V,-W

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
29-21832	Ball Driver Set, 12 Piece
Preventive Maintenance:	None

OPTION: LP15 (Also See LP02, 04, 05)

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LP25

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B (Metric Required)
Preventive Maintenance:	None

OPTION: LPC01-RB

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: LQP01

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
29-22772	Torque Driver
29-22773	Torque Driver
Preventive Maintenance:	None

OPTION: LQP8

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
29-12577	Wrench Set 10 Piece
29-13515	Feeler Gauge Set
29-22478	Alignment Tool
29-22493	Torque Driver
29-22494	Torque Driver
29-22772	Torque Driver
29-22773	Torque Driver
Preventive Maintenance:	
29-10568	Oil, 1 Gallon Can
29-22499	Alemite Stabilube
29-22500	Fedron Plate Cleaner
29-22523	Poly Oil 8CC

OPTION: LS01**Test Equipment:**

None

Hardware Aids:

29-19614

Extender PCB

Tools:

See Appendices A and B

29-19886

Nutdriver 5.5mm

29-19888

Nutdriver 8mm

29-19889

Nutdriver 10mm

29-19890

Spanner Wrench

29-19891

Wrench, Open End 5 × 8mm

29-19892

Wrench, Open End 5.5 × 7mm

29-19893

Wrench, Open End 6 × 7mm

29-19894

Wrench, Open End 8 × 10mm

29-19895

Hex Key 1.5mm

29-19896

Hex Key 2mm

29-19897

Hex Key 2.5mm

29-19898

Wrench, T 6" 3/32

Preventive Maintenance:

None

OPTION: LS120**Test Equipment:**

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

74-13698

Wick, Carriage Oil

CHAPTER 4

Terminals



DATA LOOP BACK CONNECTOR

A Data Loop Back Connector allows internally generated data (key-board data) to be transmitted from the terminal, looped externally and directed into the receive port on the terminal where it is then processed in a normal fashion as though it were received from the host.

The advantage of this is the verification of the entire data path of the terminal including the I/O port in a stand-alone fashion.

There are two types of connectors depending on communications interface of the device being tested.

RS232C (EIA)	12-15336-00
20 MA	70-15503-00

1874

1875

1876

1877

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1885

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1890

1891

1892

4.1 *Hardcopy Terminals*

OPTION: LA120-AA,BA,DA,GA

Test Equipment:

None

Hardware Aids:

12-15336

Data Loop Back Connector For
RS232C IF

70-15503

Data Loop Back Connector For 20
Milliamp IF**Tools:**

See Appendices A and B

Preventive Maintenance:

None

OPTION: LA34

Test Equipment:

None

Hardware Aids:

12-15336

Data Loop Back Connector For
RS232C IF**Tools:**

See Appendices A and B

Preventive Maintenance:

None

OPTION: LA36

Test Equipment:

None

Hardware Aids:

12-15336

Data Loop Back Connector For
RS232C IF

70-15503

Data Loop Back Connector For 20
Milliamp IF**Tools:**

See Appendices A and B

Preventive Maintenance:

74-13698

Wick, Carriage Oil

4.2 Video (CRT) Terminals

OPTION: VR14

Test Equipment:	None
Hardware Aids:	
W982	Extender
W983	Double Extender
Tools:	See Appendices A and B
29-13471	Screwdriver Slotted 6 5/8"
29-20273	Microscope 50 X
Preventive Maintenance:	None

OPTION: VSV01

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
29-20273	Microscope 50X
Preventive Maintenance:	None

OPTION: VT05

Test Equipment:	None
Hardware Aids:	
12-15336	Data Loop Back Connector For RS232C IF
70-15503	Data Loop Back Connector For 20 Milliamp IF
W987	Double Side Quad Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: VT100**Test Equipment:**

None

Hardware Aids:

12-15336

Data Loop Back Connector For
RS232C IF

70-15503

Data Loop Back Connector For 20
Milliamp IF**Tools:**

29-23189

See Appendices A and B

29-23190

Extension, Tuning Wand

74-16355

Wrench, Alignment, Video

93-03220-03

Puller, Key Cap

94-03270-03

CRT Mask Alignment

Height / Width Template

Preventive Maintenance:

None

OPTION: VT105**Test Equipment:**

None

Hardware Aids:

12-15336

Data Loop Back Connector For
RS232C IF

70-15503

Data Loop Back Connector For 20
Milliamp IF**Tools:**

29-23189

See Appendices A and B

29-23190

Extension, Tuning Wand

74-16355

Wrench, Alignment, Video

94-03220-03

Puller, Key Cap

94-03270-03

CRT Mask Alignment

Height / Width Template

Preventive Maintenance:

None

4.3 *Graphics Terminals*

OPTION: GT40

Test Equipment:

H315

Modem Test

Hardware Aids:

W984

Double Extender Board

Tools:

29-13471

See Appendices A and B

29-20273

Screwdriver, Slotted, 6 5/8"

Microscope 50×

Preventive Maintenance:

None

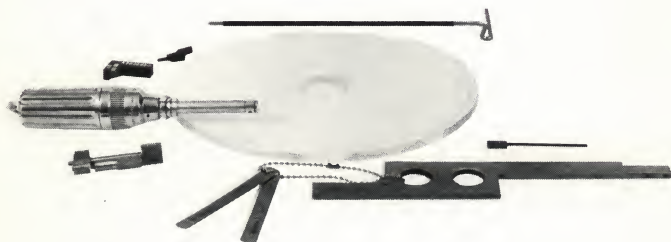
CHAPTER 5

Communications



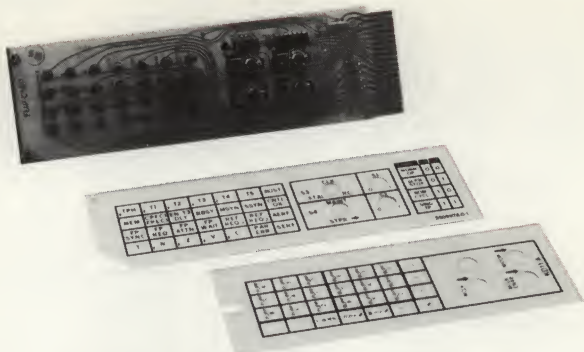
TEST CONNECTORS

These are typical of the test connectors used with communication options for diagnostic purposes.



TOOLS AND SUPPLIES

A variety of special tools and supplies necessary to service the equipment is recommended as part of the repair philosophy.



KM11-A MAINTENANCE MODULES

The KM11-A maintenance modules provide the user with a means of manually operating the system and monitoring machine states during maintenance operations. By attaching an appropriate overlay to the KM11-A indicator panel, specific function signals can be monitored for a variety of CPUs and system devices, becoming a valuable troubleshooting aid. Refer to individual options for use.

The KM11-A is comprised of a W130 indicator driver module and a W131 switch and indicator module. The appropriate CPU and device overlays must be ordered separately.

Communications

OPTION: DC10-B

Test Equipment:	None
Hardware Aids:	
W980	Module Extender
W983	Double Extender
Tools:	See Appendices A and B
Preventive Maintenance:	
12-03518 (1)	Filter
12-05433 (1)	Filter

OPTION: DC10-E

Test Equipment:	None
Hardware Aids:	
W980	Module Extender
W983	Double Extender
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DC11

Test Equipment:	
H315	Modem Test Connector
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DC76

Test Equipment:	None
Hardware Aids:	
55-09081-12	Maintenance Module Overlay Used With KM11-A
EK-PMK01-MM	Maintenance Manual
KM11-A	Maintenance Module
MP-PMK01	Print Set
PMK01-BA,BB	Portable Paper Tape Reader
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DF 10

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
Preventive Maintenance:	
12-05843 (1)	Filter
29-13243 (1)	Filter

OPTION: DH11-AA,AB,AC

Test Equipment:	None
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DH11-AD,AE

Test Equipment:	
H315	Modem Test Connector
H8611	Connector Test DH11-AD,AE
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DJ11-AA,AB,AC

Test Equipment:	
H315	Modem Test Connector
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DL11-A,B,C,D,E,W,WC

Test Equipment:	
H315	Modem Test Connector
Hardware Aids:	
W987	Double Side Quad Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: DLV11-E**Test Equipment:**

H315

Modem Test Connector

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DM11-AA,AB,AC,DA,DB,DC**Test Equipment:**

None

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DM11-BB**Test Equipment:**

None

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DMC11-DA**Test Equipment:**

H325

Modem Test Connector

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DN87S**Test Equipment:**

None

Hardware Aids:

55-09081-12

Maintenance Module Overlay Used
With KM11-A

55-09081-13

Maintenance Module Overlay Used
With KM11-A

EK-PMK01-MM

Maintenance Manual

KM11-A

Maintenance Module

MP-PMK01

Print Set

PMK01-BA,BB

Portable Paper Tape Reader

W984

Double Extender Board

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DP11-AA,CA,DB,KA**Test Equipment:**

70-08372

Test Connector

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DPV11-DA**Test Equipment:**

H325

Modem Test Connector

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DR11-A,B,C,K**Test Equipment:**

None

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DT11-A,B**Test Equipment:**

None

Hardware Aids:

55-09081-08

Maintenance Module Overlay Used
With KM11-A

KM11-A

Maintenance Module

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DU11-DA,EA**Test Equipment:**

H315

Modem Test Connector

Hardware Aids:

W987

Double Side Quad Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DUP11-DA**Test Equipment:**

H325

Modem Test Connector

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DUV11-DA**Test Equipment:**

H315

Modem Test Connector

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DV11-AA**Test Equipment:**

H8612

DM11-BB Test Connector

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DV11-BA,BB,BC**Test Equipment:**

H325

Modem Test Connector

H8612

DM11-BB Test Connector

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DSV11**Test Equipment:**

H315

Modem Test Connector

H8612

DM11-BB Test Connector

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: DW08-A,B

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: DX20

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance:
12-11255 Filter, Foam

OPTION: DZV11-A,B

Test Equipment: None
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance: None

OPTION: KL8-M

Test Equipment:
70-08952 Test Connector
Hardware Aids: None
Tools: See Appendices A and B
Preventive Maintenance: None

CHAPTER 6

Analog Devices



Analog Devices

OPTION: AD01-AN,AP,DA,DB

Test Equipment:

G735

Voltage Divider Test Card

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: AM11-K

Test Equipment:

BC08R-01

Cable, I/O, 1'

G5036

Wrap Around Test Module

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

OPTION: AN10-AA

Test Equipment:

None

Hardware Aids:

None

Tools:

See Appendices A and B

Preventive Maintenance:

None

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CHAPTER 7

Industrial Products



Industrial Products

OPTION: BD15

Test Equipment:	None
Hardware Aids:	None
Tools:	See Appendices A and B
12-10481	Tool Alignment 9' Long 7/32" Diameter
Preventive Maintenance:	None

OPTION: ICR11

Test Equipment:	UDC8-TA	UDC8 Tester
Hardware Aids:	70-11259	Test Cable
	W984	Double Extender Board
Tools:		See Appendices A and B
Preventive Maintenance:		None

OPTION: ICS11

Test Equipment:	None
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None

OPTION: ICS8

Test Equipment:	None
Hardware Aids:	
W984	Double Extender Board
Tools:	See Appendices A and B
Preventive Maintenance:	None



CHAPTER 8

General Purpose Interfaces

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General Purpose Interfaces

OPTION: DR11-L,M

Test Equipment:

H8613

Test Plug

Hardware Aids:

W984

Double Extender Board

Tools:

See Appendices A and B

Preventive Maintenance:

None



APPENDIX A

SEKIT **Systems Engineer Tool Kit**

SEKIT-MS **Systems Engineer Tool Kit-** **Metric Supplement**



SEKIT - (SYSTEMS ENGINEER TOOL KIT)

The Systems Engineer Tool Kit is designed to fill the needs of the on-site engineer for large computer sites, or, the many requirements of support level personnel responsible for a large variety of equipment.

This kit contains a large selection of tools plus an ohm meter and parts boxes in a durable carrying case with ample room to include spare parts or related equipment. The carrying case comes with solid brass hardware and a combination lock.

The metric supplement tool roll (SEKIT-MS) fits easily into this tool kit.

SPECIFICATIONS: (Approximate)

Dimensions	Width	Height	Thickness
Inches	18	13	6
Centimeters	46	32.5	15
Weight			
Pounds	21.0		
Kilograms	9.5		

Part #	Description
29-11672	8" Adjustable Wrench
29-10561	Test Clip, 16 Pin
29-10268	Spline Key Set
29-11591	Utility Plier
29-11593	Scissors
29-10151	Plastic Parts Box
29-12577	10 Pc. Ignition Wrench Set
29-13511	Comb. Push Pull Hook
29-11579	Hammer, 2.5 Oz.
29-10150	Punch
29-10149	Punch
29-11057	1 1/4" Diameter Mirror
29-10266	Offset Screwdriver
29-10261	6" Scale Metric/English
29-10147	Oiler
29-10143	Alignment Tool, Pot Trim
29-10144	Alignment Tool, Pot Trim
29-10248	Burnisher, Contact
29-10237	Soldering Iron, 22A, 30W, 120V
29-11674	Soldering Iron, 22A, 30W, 240V
29-10240	Soldering Tip
29-10239	Soldering Tip
29-10571	Soldering Tip
29-10135	#2 Screw Starter
29-11603	Tool Case & Pallets With Comb. Lock & Brass Fixtures
29-10569	Soldering Aid
29-11549	Solder Sucker
29-10134	Lamp Puller
29-10133	Solder
29-10566	All Purpose Tool (Cutter/Crimper/Stripper)
29-13467	Wire Stripper
29-10132	File, Flat
29-10564	File, Round
29-11315	File, Taper
29-10131	Wire Unwrap Tool
29-18301	Wire Wrap Tool
29-10123	30 Gauge Wire Dispenser With Cutter-Stripper
29-11101	10 M. Adhesive
29-10116	Electrical Tape 3/4"
29-10093	Acid Brush
29-10092	Dusting Brush
29-13510	VOM Meter
29-10780	Pen Lite With Batteries
29-10563	1/4" Drive Skt Set
29-10090	10' Roll Desoldering Wick
29-10081	Utility Knife
29-10009	Blades
29-11478	Swiss Pattern File Set (12 Assorted)
29-10236	Plier, Short Chain Nose
29-10206	Cutter, Diagonal Wire
29-10008	Plier, Long Nose

Part #	Description
29-10205	Feeler Gauge Set
29-11105	Hemostat
29-11073	Tool Pouch Containing:
29-11227	Tool Pouch
29-10562	Handle
29-10572	Junior Drive Handle
29-10637	Nutdriver 3/16"
29-10644	Nutdriver 7/32"
29-10664	Nutdriver 1/4"
29-10667	Nutdriver 9/32"
29-10673	Nutdriver 5/16"
29-10674	Nutdriver 11/32"
29-10677	Nutdriver 3/8"
29-10739	Nutdriver 7/16"
29-10715	Nutdriver 1/2"
29-10758	Magnetic Nutdriver 1/4"
29-10759	Allen Hex Screwdriver, .050"
29-10760	Allen Hex Screwdriver, 1/16"
29-10801	Allen Hex Screwdriver, 5/64"
29-10769	Allen Hex Screwdriver, 3/32"
29-10761	Allen Hex Screwdriver, 7/64"
29-10904	Allen Hex Screwdriver, 9/64"
29-10865	Allen Hex Screwdriver, 5/32"
29-10810	Allen Hex Screwdriver, 3/16"
29-10802	Slotted Screwdriver, 1/18"
29-10988	Slotted Screwdriver, 3/16"
29-10983	Slotted Screwdriver, 1/4"
29-10960	Slotted Screwdriver, 5/16"
29-10991	Phillips Screwdriver, #0
29-11001	Phillips Screwdriver, #1
29-11005	Phillips Screwdriver, #2
29-11010	Hand Reamer
29-10573	Extension 5"
29-10574	Combination Wrench 3/8"
29-10575	Combination Wrench 7/16"
29-10576	Combination Wrench 1/2"
29-10578	Combination Wrench 9/16"
29-10579	Combination Wrench 5/8"
29-10622	Combination Wrench 3/4"
29-10519	Screwdriver, Phillips Pocket
29-10518	Screwdriver, 8" Regular
29-10459	Screwdriver, Regular Pocket
29-10454	Screwdriver, Regular Stubby
29-10449	Screwdriver, Phillips Stubby
29-10562	Drive Handle
29-10525	Wrench 3 X 3.5
29-10542	Wrench 4 X 5
29-10560	Wrench 4.5 X 5.5
29-10514	Wrench 6 X 7
29-10513	Wrench 8 X 9



SEKIT - MS (METRIC SUPPLEMENT)

The Metric Supplement Tool Roll contains a variety of open end, socket drive and Allen wrenches to complement the Systems Engineer Tool Kit (SEKIT).

SPECIFICATIONS: (Approximate)

Weight	
Pounds	2.0
Kilograms	.9

Part #	Description
29-10512	Wrench 10 X 11
29-10499	Wrench 12 X 14
29-10487	Wrench 13 X 15
29-10484	Wrench 16 X 18
29-10483	Wrench 17 X 19
29-10441	Tool Pouch
29-10440	Nutdriver Blade 4.0
29-10437	Nutdriver Blade 4.5
29-10430	Nutdriver Blade 5.0
29-10364	Nutdriver Blade 5.5
29-10341	Nutdriver Blade 6.0
29-10330	Nutdriver Blade 7.0
29-10325	Nutdriver Blade 8.0
29-10323	Nutdriver Blade 9.0
29-10318	Nutdriver Blade 10.0
29-10316	Nutdriver Blade 11.0
29-11024	Allen Blades 1.27
29-11032	Allen Blades 1.52
29-11033	Allen Blades 2.0
29-11051	Allen Blades 2.5
29-11053	Allen Blades 3.0
29-11054	Allen Blades 4.0
29-11055	Allen Blades 5.0



APPENDIX B

STKIT ***Systems Terminal Tool Kit***



STKIT - (SYSTEMS TERMINAL TOOL KIT)

The Systems Terminal Tool Kit is designed to fill the requirements of maintenance personnel who work primarily on small systems and their options, such as hard copy printers and video terminals. A wide assortment of tools, ohm meter, and parts box are all contained within the lightweight, compact, easy to carry zipper pouch.

SPECIFICATIONS: (Approximate)

Dimensions	Width	Height	Thickness
Inches	15	11	2 1/2
Centimeters	38	28	65
Weight			
Pounds	7.0		
Kilograms	3.2		

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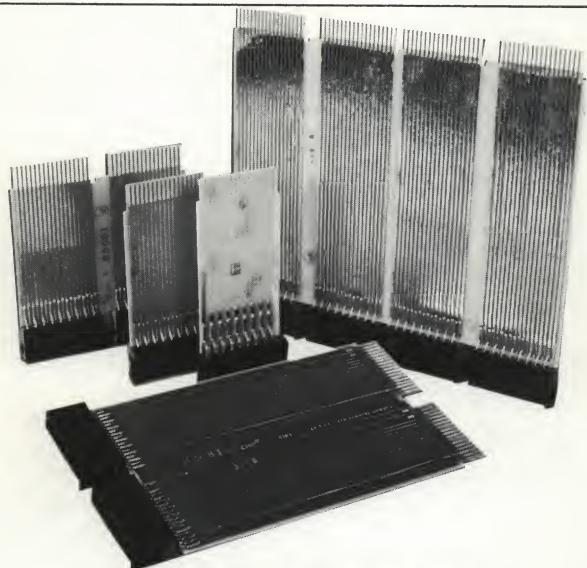
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Part #	Description
29-10268	Spline Set
29-10151	Plastic Parts Box
29-12577	10 PC Ignition Wrench Set
29-13511	Comb Push Pull Hook
29-11579	Hammer, 2.5 oz.
29-10147	Oiler
29-10143	Alignment Tool, Pot Trim
29-10144	Alignment Tool, Pot Trim
29-10248	Burnisher, Contact
29-10150	Punch
29-10149	Punch
29-11245	6" Scale, Eng/Metric
29-10570	Magnetic Pickup
29-11057	1 1/4" Diameter Mirror
29-12573	Offset Ratchet Screwdriver
29-10237	Soldering Iron, 22A, 30W, 120V
29-11674	Soldering Iron, 22A, 30W, 240V
29-10240	Soldering Tip
29-10239	Soldering Tip
29-10571	Soldering Tip
29-10569	Solder Aid
29-10135	#2 Screw Starter
29-10482	Hex Key Set
29-11602	16 X 11 Zipper Case With Pockets
29-11536	Solder Sucker
29-11560	Solder Sucker Replacement Tip
29-10133	Solder
29-11056	Plier, Retaining Ring
29-13467	Wire Stripper
29-10123	30 Gauge Wire Dispenser With Cutter-Stripper
29-10315	Wrap/Unwrap Tool
29-10116	Electrical Tape 3/4"
29-10093	Acid Brush
29-13510	VOM Meter
29-10780	Pen Lite With Batteries
29-11362	File, Flat Taper
29-10206	Cutter, Diagonal Wire
29-10238	4" Adjustable Wrench
29-10236	Plier, Short Chain Nose
29-10311	Utility Plier
29-10205	Feeler Gauge Set
29-11596	Blade Assortment
29-10310	Knife, Xacto
29-10562	Driver Handle
29-10572	Junior Driver Handle
29-10637	Nutdriver 3/16"
29-10644	Nutdriver 7/32"
29-10664	Nutdriver 1/4"
29-10667	Nutdriver 9/32"
29-10673	Nutdriver 5/16"
29-10674	Nutdriver 11/32"

Part #	Description
29-10677	Nutdriver 3/8"
29-10739	Nutdriver 7/16"
29-10715	Nutdriver 1/2"
29-10983	Slotted Screwdriver, 1/4"
29-10960	Slotted Screwdriver, 5/16"
29-10988	Slotted Screwdriver, 3/16"
29-10991	Phillips Screwdriver, #0
29-11001	Phillips Screwdriver, #1
29-11005	Phillips Screwdriver, #2
29-10459	Screwdriver, Regular Pocket
29-10519	Screwdriver, Phillips Pocket

APPENDIX C

Module Extender Boards



MODULE EXTENDER BOARDS

Module extender boards are usually used to extend system modules for test and/or maintenance. Module extender boards permit access to the system module circuits and components without breaking the electrical connections between the system module and the backplane or mounting panel wiring. Extended length module extender boards should be used when the system comprises extended length system modules. Double-height and quad-height module extender boards should be used when the system module to be extended is double or quad high; however, two single-height module extender boards could be used to extend a double-height system module, or two double-height (or four single-height) module extender boards could be used to extend a quad-height system module. The following table describes the module extender boards. The board contact fingers connect directly to the connector socket pins on a 1:1 basis except as noted in the "Description" column of the table.

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Part #: W900**Contact Fingers:** 72**Size:** Double-Height, Extended Length**Description:**

Used in systems comprising extended length modules to extend a double-height, 72-pin Module with +5 Vdc power at contact fingers AA2 & BA2 & with ground at contact fingers AC2, BC2, AT1, BT1, ie., most double-height M-series modules. This is a multilayer module: layer 2 is the ground plane & layer 3 is the +5 Vdc power plane.

Part #: W9800**Contact Fingers:** 18**Size:** Single-Height, Standard Length**Description:**

Used in systems comprising standard length modules to extend 2 single-height, 18-pin (one side only) modules, i.e., most A-, K-, and W-series modules. None of the contact fingers are interconnected.

Part #: W982**Contact Fingers:** 36**Size:** Single-Height, Standard Length**Description:**

Used in systems comprising standard length modules to extend a single-height, 36-pin module, i.e., single-height M-series modules. None of the contact fingers are interconnected.

Part #: W983**Contact Fingers:** 72**Size:** Double-Height, Standard Length**Description:**

Used in systems comprising standard length modules to extend 2 double-height, 72-pin modules, i.e., double-height M-series modules. None of the contact fingers are interconnected.

Part #: W984**Contact Fingers:** 72**Size:** Double-Height, Extended Length**Description:**

The same as W983 except the W984 is an extended length module extender board and should be used to extend a system module located beside one, or between two extended length modules.

Part #: W987**Contact Fingers:** 144**Size:** Quad-Height, Extended Length**Description:**

The same as W984 except the W987 is a quad-height module extender board and should be used to extend quad-height (144-pin) modules.

Part #: W9024**Contact Fingers:****Size:****Description:****Part #: W9025****Contact Fingers:****Size:****Description:**

4-layer Hex extender, 18"

Part #: W904**Contact Fingers:****Size:****Description:**

4-layer Hex x 8.5" extender board

Part #: W9042**Contact Fingers:****Size:****Description:**

Berg-to-Berg extender for use with W904, 4-layer ground

Part #: W9044**Contact Fingers:****Size:****Description:**

4-layer 16.5" Hex extender

Part #: W9000**Contact Fingers:****Size:****Description:**

4-layer Hex 1.5" extender

Part #: W9001

Contact Fingers:

Size:

Description:

4-layer Quad 1.5" extender

Part #: W9022

Contact Fingers:

Size:

Description:

TU16, extender, male to male

Part #: W9040

Contact Fingers:

Size:

Description:

4-layer Hex 9.25" extender



APPENDIX D

Test Equipment



Part #	Description	Where Used	
29-17547	Exerciser, Seek / Restore	RK02	RK03
29-21094	Control Status Test Kit	TR79	
29-21733	Field Tester	TU70	
29-21922	Test Panel	TS03	
29-22304	Kit PE RD / WR Data Test	TR79	
29-23218	Module Extender PCBA	TU77	
70-08372	Test Connector	DP11-(all)	
70-08952	Test Connector	KL8-M	
70-09463	Test Connector KW11	AD11-K	ADK11-KT
70-11459	FS Test Fixture	MM11-WP	
BC08R-01	Cable, I/O, 1'	AD11-K	AM11-K
		ADK11-KT	
DF32-TA	Timing Track Writer	DF32	
DF32D-TA	Timing Track Writer	DF32-D	
EK-0DF32-MM	DF32 Timing Track Writer Maintenance Manual	DF32	DF32-D
EK-RK05X-MM	Tester Maintenance Manual	RK05	RK05J
		RK05F	
EK-RK67F-0P	RK06 / 07 FTB Operation / Service Manual	RK06-EA,EC	RK07-EA,EC
		RK06-EB,ED	RK07-EB,ED
EK-RP02T-MM	RP02-03 Tester Manual	RP02	RP03
		RP02-AS, BS	
G500-T	Skew Tester Module	TU55	TU56
G5036	Wrap Around Test Module	AD11-K	AM11-K
		ADK11-KT	
G735	Voltage Divider Test Card	AD01-(all)	
G742		KL10-A,B,D	
H315	Modem Test Connector	DC11	DU11-DA,EA
		DH11-AD,AE	DUV11-DA
		DJ11-AA,AB,AC	DVS11
		DL11-(all)	GT40
		DLV11-E	KL10-C,E
H325	Modem Test Connector	DMC11-DA	DUP11-DA
		DPV11-DA	DV11-(all)
H8611	Connector Test DH11-AD,AE	DH11-AD,AE	
H8612	DM11-BB Test Connector	DV11-BA,BB,BC	DVS11
H8613	Test Plug	DR11-L,M	
M8912	Slave Test Function GEN	TE10N	TU10N-E,F
		TE10W	TU10W-E,F
		TE16	TU16-E
		TU10-E,F	
RK05-TA	Read / Write Position Tester	RK05	RK05J
		RK05F	
RK6 / 7-TA	RK06 / 07 Exerciser (60 Hz)	RK06-EA,EC	RK07-EA,EC
RK6 / 7-TB	RK06 / 07 Exerciser (50 Hz)	RK06-EB,ED	RK07-EB,ED

Part #	Description	Where Used	
RM03-TA	RM02/03 Tester	RM02 RM05	RM03
RP02-TA	RP02 Disk Pack Tester	RP02 RP02-AS,BS	RP03
RP04-TC	RP04 Interface To RP06-TA	RP04-(all)	
RP06-TA	RP05/06 Test Service Kit	RP04-(all) RP05	RP06
RS04-TA	Timing Track Writer	RS03	RS04
RS08-TA	Timing Track Writer	RS08	
RS09-TA	Timing Track Writer	RS09 RS09-A	RS11
RS64-TA	Timing Track Writer	RS64	
UDC8-TA	UDC8 Tester	ICR11	

APPENDIX E

Hardware Aids

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Part #	Description	Where Used	
12-15336	Data Loop Back Connector For RS232C IF	LA34 LA36 LA120-(all)	VT05 VT100 VT105
29-11691	Tape, Master Output 1200'	TU77	
29-13804	Double Extender PCB	RP02	RPR02
29-16151	Single Extender PCB	RP02	RPR02
29-17549	Extender PCB	RK02	RK03
29-18939	Extender PCB	RP02-AS,BS RP03	RP04-(all)
29-19224	Tape, Master Skew 1200'	TU10-E,F TU10N-E,F TU10W-E,F TU16-E	TU40 TU41 TU45 TU70
29-19229	Extender PCB	CR11 CR11-A	CR11-BC,BD CR8-FA,FB
29-19614	Extender PCB	LS01	
29-20658	C E Pack	RP02-AS,BS RP02	RP03 RPR02
29-21291	Extender Jumper Card, PCB	RP04-(all)	
29-21292	C E Pack 333G	RP04-(all)	RP05
29-21368	Extender PCB	CTS11	
29-21925	Extender PCB	TS03	
29-22020	Tape, Master Skew 7" Reel	TE10N TE10W TE16	TS03 TS11
29-22190	Extender PCB	RP05	RP06
29-22193	C E Pack	RP06	
29-22933	Extender PCB	RM02 RM03	RM05
30-13992-02	C E Pack	RM02	RM03
30-14957	Alignment Diskette	RX01	RX02
30-17108	C E Pack	RM05	
55-09081-01	Maintenance Module Overlay Used With KM11-A	KE11-A	
55-09081-02	Maintenance Module Overlay Used With KM11-A	KT11-A	
55-09081-03	Maintenance Module Overlay Used With KM11-A	RK11-C	
55-09081-04	Maintenance Module Overlay Used With KM11-A	RK11-C	
55-09081-05	Maintenance Module Overlay Used With KM11-A	PDP-11/05 PDP-11/10	TM11 TMA11
55-09081-06	Maintenance Module Overlay Used With KM11-A	KT11-B	
55-09081-07	Maintenance Module Overlay Used With KM11-A	FPP12	

Part #	Description	Where Used	
55-09081-08	Maintenance Module Overlay Used With KM11-A	DT11-A	
55-09081-10	Maintenance Module Overlay Used With KM11-A	PDP-11/05	PDP-11/10
55-09081-11	Maintenance Module Overlay Used With KM11-A	RK11-D,E	
55-09081-12	Maintenance Module Overlay Used With KM11-A	PDP-11/35 PDP-11/40 KL10-A,B,D	KL10-C,E DC76 DN87S
55-09081-13	Maintenance Module Overlay Used With KM11-A	KE11-A KT11-B KT11-C	KT11-D DN87S
55-09081-14	Maintenance Module Overlay Used With KM11-A	RX11	RX211
55-09974	Maintenance Module Overlay Used With KM11-A	PDP-11/45 PDP-11/55	FP11-B,C
70-11259	Test Cable	ICR11	
70-15503	Data Loop Back Connector For 20 Milliamp IF	LA36 LA120-(all) VT05	VT100 VT105
74-13772	Maintenance Module Overlay Used With KM11-A	PDP-11/70	
90-08268	Compound Thermal Joint	TE10N TE10W	TE16
EK-FS002- OP-001	User's Manual	PDP-11	
EK-M7855- UG-001	User's Guide	PDP-11	
EK-PMK01-MM	Maintenance Manual	PDP-8-A,E,F,M PDP-11/04 PDP-11/05 PDP-11/10 PDP-11/34 PDP-11/35 PDP-11/40	PDP-11/45 PDP-11/55 PDP-11/60 PDP-11/70 DC76 DN87S
KM11-A	Maintenance Module	11/05 11/10 11/35 11/40 11/45 11/55 FP11-B,C FPP12 KG11A,E,F KL10-A,B,D	KL10-A,B,D KL10-C,E KT11-A,B,C,D RK11-C,D,E RX11,211 DC76 DN87S DT11-A,B
M941	Jumper Extender Board		
MP-PMK01	Print Set	See EK-PMK01-MM	

Part #	Description	Where Used	
PMK01-AA,AB CA,CB	Portable Paper Tape Reader	PDP-8-A,E,F,M	
PMK01-BA,BB, CA,CB	Portable Paper Tape Reader	DC76	PDP-11/40
		DN87S	PDP-11/45
		PDP-11/04	PDP-11/55
		PDP-11/05	PDP-11/60
		PDP-11/10	PDP-11/70
		PDP-11/35	
RK05K-AC	Alignment Cartridge	RK05	RK05J
		RK05F	
RK06K-AC	Alignment Cartridge	RK06-EA,EC	RK06-EB,ED
RK07K-AC	Alignment Cartridge	RK07-EA,EB	RK07-EB,ED
UBE	UNIBUS Exerciser	PDP-11/04	PDP-11/40
		PDP-11/05	PDP-11/45
		PDP-11/10	PDP-11/55
		PDP-11/34	PDP-11/60
		PDP-11/35	PDP-11/70
UVM-TA,TB	UNIBUS Voltage Margin Tester	PDP-11/04	PDP-11/40
		PDP-11/05	PDP-11/45
		PDP-11/10	PDP-11/55
		PDP-11/34	PDP-11/60
		PDP-11/35	PDP-11/70
W131	Maintenance Board Expansion	PDP-11/70	
W133	Double Maintenance Board	PDP-11/70	
W900	Layer Extender Board	FP11-B,C	PDP-11/60
		PDP-11/04	PDP-11/70
		PDP-11/34	RP04-(all)
		PDP-11/34A	RP05
		PDP-11/45	RP06
W9017	Universal Extender	KL10-C,E	KL10-A,B,D
W9017-YA	W9017 With Right Angle For Corp Cab	KL10-C,E	
W9025	Universal Extender - HEX	KS10	VAX
W974	Vector Module	MF10	
W980	Module Extender	DF32	DC10-B
		TU55	DC10-E
		TU56	MA10
W982	Extender Board	CR10-(all)	RS08
		DF32-D	RS09
		FPP12	RS09-A
		KT11-B	RS11
		LP08-P	RS64
		LP10-(all)	TC59
		MA10	TM11
		ME10	TMA11
		MF10	VR14
		RM10-B	

Part #	Description	Where Used	
W983	Double Extender	CR10-(all)	RS09
		DC10-B	RS09-A
		DC10-E	RS11
		DF32	RS64
		DF32-D	TM11
		FPP12	TMA11
		KT11-B	TU10-E,F
		LP08-P	TU10N-E,F
		LP10-(all)	TU10W-E,F
		ME10	TU16-E
		MF10	TU55
		RK11-C	TU56
		RM10-B	VR14
		RS08	
W984	Double Extender Board	CD11-EA,EB	PDP-11/04
		DC11	PDP-11/05
		DC76	PDP-11/10
		DH11-(all)	PDP-11/34
		DJ11-AA,AB,AC	PDP-11/34A
		DM11-(all)	PDP-11/35
		DN87S	PDP-11/40
		DP11-(all)	PDP-11/45
		DR11-(all)	PDP-11/55
		DT11-A,B	PDP-11/60
		DV11-BA,BB,BC	RK05
		DVS11	RK05F
		GT40	RK05J
		ICR11	RK11-D,E
		ICS11	RS03
		ICS8	RS04
		KE11-A	RP04-(all)
		KS10	RP05
		KT11-B	RP06
		KT11-C	TC01
		KT11-D	TC08
		MF10	TMB11
		MM11-WP	TU10-E,F
W987	Double Side Quad Extender Board	PDP-8-A,E,F,M	VR14
		CR11	PDP-8-A,E,F,M
		CR11-A	RX11
		DL11-(all)	RX211
		DN87S	RX8E
		DU11-DA,EA	RX28
		FP11-B,C	TM8-E
		LP11	VT05

APPENDIX F

Tools



Part #	Description	Where Used	
12-10481	Alignment Tool	BD15	TU10-E,F
12-12159-01	Clip, Test, 16 Pin IC	KS10	
12-12159-02	Clip, Test, 24 Pin IC	KS10	
12-13091	SW, Key	KS10	
29-11635	Tachometer	TU77	
29-11636	Gauge, 5PSIG	TU77	
29-11647	Accessories, Portable Accuracy	TU77	
29-12522	Scale, Spring 32 oz	LP10-A	
29-12563	Glass Alignment DF32	DF32	DF32-D
29-12577	Wrench Set 10 Piece	LQP8	
29-12635	Gauge, Card	CTS11	
29-13163	Head Installation	RP02	RPR02
29-13209	Carriage Moving	RP02	RPR02
29-13211	Dentent Cup	RP02	
29-13212	Screwdriver, Torque 2-36" /lb	RS03	RP02
		RS04	RP02-AS,BS
		RM02	RP03
		RM03	RPR02
		RM05	
29-13213	Head Adjustment	RP02	RPR02
29-13471	Screwdriver Slotted 6 5/8"	GT40	VR14
29-13515	Feeler Gauge Set	LQP8	TE10W
		TE10N	TE16
29-13519	Hex Key, Long Arm	RP02	RPR02
29-13805	Lubricator	RPR02	
29-13859	Head Adjustment	RM10-B	
29-14133	Screwdriver, Beryllium 5/16" Tip	RP02	RPR02
29-14134	Screwdriver, Beryllium PHIL 8 1/8"	RP02	RPR02
29-16158	Extender PCB	LP02	LP07-AA,BA
29-16220	Wrench, Torque	RM10-B	
29-16871	Magnasee	TE10N	TU41
		TE10W	TU45
		TE16	TU55
		TR79	TU56
		TS03	TU58
		TS11	TU60
		TU10-E,F	TU66
		TU10N-E,F	TU70
		TU10W-E,F	TU72
		TU16-E	TU77
		TU40	

Part #	Description	Where Used	
29-17376	Adaptor, Torque	RP02	RPR02
29-17381	Screwdriver, Torque	RP02	RPR02
29-17382	Bar, Extender 6"	RP02	RPR02
29-17551	Cone	RK02	RK03
29-17552	Bar	RK03	RK03
29-17553	Screwdriver, Torque 1-100	RK02	RK03
29-17765	Coarse Adjustment Tool	RP02-AS,BS	RP03
29-17766	Extract PCB	RP02-AS,BS	RP03
29-18011	Screwdriver, Beryllium 8 5/8"	RP02-AS,BS	RP03
29-18055	Extractor, Pin	LP02	
29-18109	Wrench, Allen, Head Adjustment	RP02-AS,BS RP03	RPR02
29-18118	Alignment Tool Kit Carriage	RP02-AS,BS	RP03
29-18196	Alignment Kit Carriage	RPR02	
29-18286	Shim 0.002"	RP02-AS,BS	RP03
29-18607	Gauge, Roller Guide	TU10-E,F	
29-18608	Gauge, Reel Read / Write	TU10-E,F	
29-18609	Jig Capstan	TE10N TE10W	TE16 TU10-E,F
29-18610	Gauge, Read / Write Set-up	TU10-E,F	
29-18611	Gauge, Hub	TU10-E,F	
29-18923	Plier, Grip Ring	TU10-E,F	
29-19021	Head Adjuster, Fine	RP02-AS,BS	RP03
29-19179	Shim Transducer 0.002"	RP02-AS,BS RP03	RP04-(all)
29-19180	Shim Transducer 0.003"	RP04-(all)	
29-19181	Shim Transducer 0.005"	RP04-(all)	
29-19182	Shim Transducer 0.010"	RP04-(all)	
29-19229	Extender PCB	MS11-H	
29-19501	Insert / Extract	CD11-EA,EB CR10-(all)	CR11-(all) CR8-FA,FB
29-19663	Inspection Mirror	RK05 RK05F	RK05J
29-19886	Nutdriver 5.5mm	LS01	
29-19888	Nutdriver 8mm	LS01	
29-19889	Nutdriver 10mm	LS01	
29-19890	Spanner Wrench	LS01	
29-19891	Wrench, Open End 5 × 8mm	LS01	
29-19892	Wrench, Open End 5.5 × 7mm	LS01	
29-19893	Wrench, Open End 6 × 7mm	LS01	
29-19894	Wrench, Open End 8 × 10mm	LS01	
29-19895	Hex Key 1.5mm	LS01	
29-19896	Hex Key 2mm	LS01	
29-19897	Hex Key 2.5mm	LS01	

Part #	Description	Where Used	
29-19898	Wrench, T 6" 3/32	LS01	
29-20273	Microscope 50X	GT40	TU41
		TE10N	TU45
		TE10W	TU55
		TE16	TU56
		TR79	TU58
		TS03	TU60
		TS11	TU66
		TU10-E,F	TU70
		TU10N-E,F	TU72
		TU10W-E,F	TU77
		TU16-E	VR14
		TU40	VSV01
29-20655	Head Adjustment Tool	RK02	RK03
29-20678	Gauge, 0-60"	TU40	TU70
		TU41	TU77
		TU45	
29-20906	Wrench, Torque	RM02	RM05
		RM03	
29-20994	Wrench, Torque	RK05	RK05F
29-20995	Bit, Allen	RK05	RK05J
		RK05F	
29-21021	Remover, Hub Clamp	TU40	TU41
29-21022	Gauge, Capstan HT	TU40	TU41
29-21284	Head Alignment	RP04-(all)	
29-21285	Head Installation	RP04-(all)	
29-21286	Carriage Alignment Kit	RP04-(all)	
29-21287	Alignment Head	RP04-(all)	
29-21288	Head Unload	RP04-(all)	
29-21290	Air Measure Kit	RP04-(all)	
29-21321	Ejector, Card	CTS11	
29-21403	Shim Transducer 0.020"	RP04-(all)	
29-21412	Extractor	RP04-(all)	
29-21433	Feeler Stock 0.006" X 12"	TU40	TU41
29-21481	Cleaning Kit, Brush	RP04-(all)	
29-21483	Gauge, 3 Mil Shim	RP04-(all)	
29-21484	Gauge, 5 Mil Shim	RP04-(all)	
29-21485	Extractor, Pin/Contact	RP04-(all)	
29-21486	Gauge, 2 Mil Shim	RP04-(all)	
29-21492	Bit, Allen, 7/64"	RM10-B	RS04
		RS03	
29-21740	Extender PCB	TU70	
29-21832	Ball Driver Set, 12 Piece	LP14	TU70
		LP14-V,W	
29-21841	Gauge, Pressure 0-10	TU70	
29-21904	Alignment Tool, Tape	TS03	

Part #	Description	Where Used	
29-21940	Puller, Capstan	TS03	
29-22037	Gauge, Tape Height	TS03	
29-22038	Gauge, TNSN Arm, Align 3	TS03	
29-22039	Depth Gauge 0-3"	TE10N	TE16
		TE10W	TU77
29-22179	Head Alignment Tool	RP05	RP06
29-22180	Head Installation Tool	RP05	RP06
29-22181	Head Torque Tool	RP05	RP06
29-22183	Kit, Mechanical Alignment	RP05	RP06
29-22265	Tensiometer, Bolt 5M Series	TE10N	TU10N-E,F
		TE10W	TU10W-E,F
		TE16	TU16-E
29-22311	Bit, Torque, Head Alignment	RP04-(all)	
29-22445	Socket Set Special 3/8"	RP05	RP06
29-22478	Alignment Tool	LQP8	
29-22493	Torque Driver	LQP8	
29-22494	Torque Driver	LQP8	
29-22521	Driver, Torque 125"/oz	RK05	RK05J
		RK05F	
29-22522	Bit, 3/32", Allen, Female	RK05	RK05J
		RK05F	
29-22544	Pin, Dowel	RP05	RP06
29-22771	RK06 Tool Kit	RK06-EA,EC	RK07-EA,EC
		RK06-EB,ED	RK07-EB,ED
29-22772	Torque Driver	LQP01	LQP8
29-22773	Torque Driver	LQP01	LQP8
29-22914	Tool, Sensor Height Adjustment	RM02	RM03
29-22934	Carriage/Spindle Adjustment Tool	RM02	RM05
		RM03	
29-22935	Head Adjustment Tool	RM02	RM05
		RM03	
29-22936	Bit, 1/4 Hex Head Adjustment	RM02	RM05
		RM03	
29-22998	Gauge, Hub Height Adjustment	TE10N	TE16
		TE10W	
29-22999	Gauge, Combination Span Adapt	TE10N	TE16
		TE10W	
29-23001	Insert Tool	RM02	RM03
29-23189	Extension, Tuning Wand	VT100	VT105
29-23190	Wrench, Alignment, Video	VT100	VT105
29-23206	Reel Motor Centering Tool	TU77	
29-23207	Bar, Locating	TU77	
29-23228	Tube Fitting, Lower	TU77	

Part #	Description	Where Used	
36-10989-01	Card Mark Sense Test Scorecard	CR10-(all) CR11-(all)	CR8-FA,FB
36-15207-01	MSB-11 Cards, BASIC, Carton	CR10-(all) CR11-(all)	CR8-FA,FB
36-15208-01	MSB-11 Cards, FORTRAN, Carton	CR10-(all) CR11-(all)	CR8-FA,FB
48-50023-01	Cellu Acet, Amber 0.001" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
48-50023-03	Cellu Acet, Red 0.002" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
48-50023-04	Cellu Acet, Green 0.003" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
48-50023-05	Cellu Acet, Tan 0.004" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
48-50023-06	Cellu Acet, Blue 0.005" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
48-50023-07	Cellu Acet, Tran Matt 0.0075" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
48-50023-08	Cellu Acet, Brown 0.10" × 10"	TE10N TE10W TE16	TU10N-E,F TU10W-E,F TU16-E
74-08010	Alignment Gauge Reel Hub	TU55	TU56
74-16187	Vacuum System Pulley	TE10N	TE16
	Height Gauge	TE10W	
74-16355	Puller, Key Cap	VT100	VT105
93-06056	Carriage Alignment Fixture	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06058	Wrench, Eccentric Bearing	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06072	Shutter Alignment Tool	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06076	Head Installation And Removal Tool	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06087	Head Alignment Fixture	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06122	Set Of 5 Shims For Glass Shutter	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED

Part #	Description	Where Used	
93-06123	2 Shims For Speed Transducer	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06171	Head Separation Assembly Tool	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06240	Indicator/Holder Glass Shutter Alignment	RK06-EA,EC RK06-EB,ED	RK07-EA,EC RK07-EB,ED
93-06353	Belt Gauge, 60 Hz (CALCOMP)	RX01	
93-06353-01	Belt Gauge, 50 Hz (CALCOMP)	RX01	
93-06353-02	Belt Gauge, 60 Hz (DEC)	RX01	RX02
93-06353-03	Belt Gauge, 50 Hz (DEC)	RX01	RX02
94-03220-03	CRT Mask Alignment	VT100	VT105
94-03270-03	Height/Width Template	VT100	VT105
RSKIT-A	Head Alignment And Disk Repair Kit	RS08 RS09	RS09-A RS11
SEKIT-AA (60Hz)	Systems Engineer Tool Kit		
SEKIT-AB (50Hz)	Systems Engineer Tool Kit		
SEKIT-MS	Systems Engineer Tool Kit (Metric Supplement)		
SP45-KA	11/45 Maintenance Tool Kit	FP11-B,C PDP-11/45	PDP-11/55
STKIT-AA (60 Hz)	Systems Terminal Tool Kit		
STKIT-AB (50 Hz)	Systems Terminal Tool Kit		

APPENDIX G

Preventive Maintenance

THE
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PUBLISHED WEEKLY
CHICAGO, ILL., U.S.A.

Part #	Description	Where Used	
12-03518	Filter	DC10-B	
12-05433	Filter	DC10-B	ME10
		MA10	
12-05748	Filter	PDP-8A	
12-05843	Filter	DF10	
12-05944	Motor, Vacuum*	TU10-E,F	
12-09388	Filter, Air Absolute	RS08	RS09-A
		RS09	RS11
12-09877	Washer, Tape Guide	TE10N	TE16
		TE10W	
12-09956	Muffler	TU10-E,F	TU10W-E,F
		TU10N-E,F	TU16-E
12-10021	Ring, Compression	TU10-E,F	TU10W-E,F
		TU10N-E,F	TU16-E
12-10027	Brake	TU10-E,F	TU10W-E,F
		TU10N-E,F	TU16-E
12-10030	Washer, Thrust	TU10-E,F	TU10W-E,F
		TU10N-E,F	TU16-E
12-10477	Sensor, Low Pressure	TU10-E,F	TU10W-E,F
		TU10N-E,F	TU16-E
12-10757	Air Filter	MF10	
12-10803-01	Filter, Air	RS03	RS04
12-11255	Filter, Foam Rubber	DX20	RS04
		RS03	
12-12106	Filter, Air	PDP-8A	
12-12175-01	Filter, Air, High Efficiency	RK05	RK05J
		RK05F	
12-12392-01	Filter, Foam	PDP-11/70	
12-12392-02	Filter, Air (10 1/2")	PDP-11/04	PDP-11/34A
		PDP-11/34	PDP-11/60
12-12640	Contact Grounding	RK06-EA,EC	RK07-EA,EC
		RK06-EB,ED	RK07-EB,ED
12-12707	Filter, Air (5 1/4")	PDP-11/04	PDP-11/34A
		PDP-11/34	PDP-11/60
12-12904	Filter, Air Hepa, 32CF	RK06-EA,EC	RK07-EA,EC
		RK06-EB,ED	RK07-EB,ED
12-12944	Filter, Foam	RK06-EA,EC	RK06-EB,ED
12-13097-03	Filter, Air, Hepa, High Efficiency	RL01	RL02
12-13119	Hub, Quick Release	TE10N	TE16
		TE10W	
12-14614-01	Filter, Air	PDP-11/03J	
22-00007	Disk & Head Cleaner Kit	RK05	RP04-(all)
		RK05F	RP05
		RK05J	RP06

*Not used after FCO#0098 is installed.

Part #	Description	Where Used	
29-10169	Filter, Drive	RP02	RPR02
29-10568	Oil, 1 Gallon Can	LQP8	
29-11760	Hub Repair Kit	TE10N	TU10N-E,F
		TE10W	TU10W-E,F
		TE16	TU16-E
		TU10-E,F	
29-13243	Filter	DF10	RPR02
		RP02	
29-14111	CAM Unload A	RPR02	
29-14112	CAM Unload B	RPR02	
29-14309	Filter, PAC	RP02	RP03
		RP02-AS,BS	RPR02
29-15198	Aero Duster Spray	DF32	DF32-D
29-15199	Cleaner, Tape Head	DF32	TU41
		DF32-D	TU70
		TU40	
29-15510	Filter, Air	RK01	
29-15536	Filter, Air	RK01	
29-16639	Filter, Glassaire	RP02	RPR02
29-16735	Filter	RM10-B	
29-17612	Contact Ground	RP02-AS,BS	RP04-(all)
		RP03	
29-17679	Filter, Pre	RP02	RP03
		RP02-AS,BS	
29-17681	Filter, Absolute	RP02	RP03
		RP02-AS,BS	
29-18558	Lube 2, Solenoid	CMS11-H	
29-18718	Guide, Bottom Right	TU40	
		TU41	
29-18719	Guide, Bottom Left	TU40	
		TU41	
29-18722	Guide, Top Left	TU40	
		TU41	
29-18778	Filter	TU40	
		TU41	
29-18779	Filter, Purolator	TU40	
		TU41	
29-19101	Filter	RK02	RK03
29-19426	Filter Assembly	CR10-DA,DB	CR10-FA,FB
		CR10-EA,EB	
29-19427	Filter Assembly	CR10-HA,HB	
29-19557	Tex Pad	CR11-BC,3D	RK02
		CR8-FA,FB	RK03
		RK01	
29-19883	Button, Carbon	RPR02	
29-20915	O-Ring	RP02	RP03
		RP02-AS,AB	RPR02
29-21275	Filter, Pre	RP04-(all)	
29-21276	Filter, Absolute	RP04-(all)	

Part #	Description	Where Used	
29-21497	Brush Assembly	RP02-AS,BS	RP03
29-21643	Filter	TU70	
29-21644	Prefilter	TU70	
29-21653	Filter	TU70	
29-21863	Brush, Motor*	TU10-E,F	
29-21964	Hub Repair Kit	TS03	
29-22086	Filter, Absolute	RP05	RP06
29-22282	Filter, Air	TU45	
29-22499	Alemite Stabilube	LQP8	
29-22500	Fedron Plate Cleaner	LQP8	
29-22523	Poly Oil 8cc	LQP8	
29-22925	Filter, Air	RM02	RM03
29-22926	Filter, Washable Aluminum	RM02	RM03
29-23220	Muffler	TU77	
29-23259	Filter, Air	TU77	
29-23590	Filter, Washable Aluminum	RM05	
29-23591	Filter, Air	RM05	
70-13178	Brush Arm Assy (Modified)	RK06-EA,EC	RK06-EB,ED
74-07181	Prefilter	RS08	RS09-A
		RS09	RS11
74-07866	Filter, Bezel	PDP-8A	PDP-8E
74-08250	Filter, Foam, Side	PDP-8A	PDP-8E
74-08472	Filter	ME10	
74-09424	Filter, Side	PDP-8F	PDP-8M
74-09624		PDP-8A	
74-10768	Filter, Side	PDP-8A	PDP-8M
		PDP-8F	
74-13698	Wick, Carriage Oil	LA11-P	LA36
		LA180	LS120
74-15294	Brush Ground	RL01	
74-15297	Filter, Foam	RL02	
74-15302	Strap, Brush Holder	RL02	
74-16121	Plug Filter	TU10N-E,F	TU16-E
		TU10W-E,F	
74-16123	Foam Filter, Large	TU10N-E,F	TU16-E
		TU10W-E,F	
74-16662	Cover Buffer Column	TE10N	TE16
		TE10W	
74-17902	Flange, Front Fixed Reel	TE10N	TE16
		TE10W	
H950-SA	Filter, H950 CAB.	PDP-11/70	PDP-8E
		PDP-8A	PDP-8F
RK05K-AA	DEC Pack Cleaner 120V	RK05	RK05J
RK05K-AB	DEC Pack Cleaner 240V	RK05	RK05J
RK07K-AA	Disk Cartridge Cleaner	RK06-EA,EC	RK07-EA,EC
		RK06-EB,ED	RK07-EB,ED
RK07K-AB	Disk Cartridge Cleaner	RK06-EA,EC	RK07-EA,EC
		RK06-EB,ED	RK07-EB,ED

*Not used after FCO#0098 is installed.

Part #	Description	Where Used	
RL01K-AA	Disk Cartridge Cleaner	RL01	RL02
RL01K-AB	Disk Cartridge Cleaner	RL01	RL02
RSC04	Disk Cleaning Kit	RS04	
RSC08	Disk Cleaning Kit	DF32	RS09
		DF32-D	RS09-A
		RS03	RS11
		RS08	RS64
TUC01	Tape Cleaning Kit	TE10N	TU41
		TE10W	TU45
		TE16	TU55
		TR78	TU56
		TS03	TU58
		TS11	TU60
		TU10-E,F	TU66
		TU10N-E,F	TU70
		TU10W-E,F	TU72
		TU16-E	TU77
		TU40	

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